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CFHTLenS: The Canada-France-Hawaii Telescope Lensing Survey - Imaging Data and Catalogue Products

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ABSTRACT

We present data products from the Canada-France-Hawaii Telescope Lensing Survey (CFHTLenS). CFHTLenS is based on the Wide component of the Canada-France-Hawaii Telescope Legacy Survey (CFHTLS). It encompasses 154 deg^2 of deep, optical, high-quality, sub-arcsecond imaging data in the five optical filters $u^*g'r'i'z'$. The scientific aims of the CFHTLenS team are weak gravitational lensing studies supported by photometric redshift estimates for the galaxies. The article presents our data processing of the complete CFHTLenS data set. We were able to obtain a data set with very good image quality and high-quality astrometric and photometric calibration. Our external astrometric accuracy is between 60-70 mas with respect to SDSS data and the internal alignment in all filters is around 30 mas. Our average photometric calibration shows a dispersion on the order of 0.01 to 0.03 mag for $g'r'i'z'$ and about 0.04 mag for u^* with respect to SDSS sources down to $i_{\mathrm{SDSS}} \leqslant 21$. We demonstrate in accompanying articles that our data meet necessary requirements to fully exploit the survey for weak gravitational lensing analyses in connection with photometric redshift studies. In the spirit of the CFHTLS all our data products are released to the astronomical community via the Canadian Astronomy Data Centre at `http://www.cadc-ccda.hia-iha.nrc-cnrc.gc.ca/community/CFHTLens/query.html`. We give a description and *how-to* manuals of the public products which include image pixel data, source catalogues with photometric redshift estimates and all relevant quantities to perform weak lensing studies.

Key words: cosmology: observations - methods: data analysis

1 INTRODUCTION

Our knowledge of the nature and the composition of the Universe has evolved tremendously during the past decade. A combination of observations has led to the conclusion that the Universe is dominated by a uniformly distributed form of *dark energy*. Chief evidences for this conclusion are that the expansion rate is accelerating (from the distances to supernovae; see e.g. Riess et al. 1998; Perlmutter et al. 1999; Riess et al. 2007), that the Universe is flat (from the Cosmic Microwave Background; see e.g. Komatsu et al. 2011) and that *dark matter* cannot provide the critical density (for instance through galaxy cluster studies; see e.g. Allen et al. 2011). As the standard accelerating Universe is set on such solid grounds one of the main goals of cosmology is now to get a precise understanding on the nature of dark matter and dark energy.

Complementary to the observations mentioned above, weak gravitational lensing has been recognised as one of the most important tools to study the invisible Universe. Inhomogeneities in the mass distribution cause the light coming from distant galaxies to be deflected which leads to a direct observable distortion of galaxy images. Because the lensing effect is insensitive to the dynamical and physical state of the mass constituents, surveying coherent image distortions over large portions of the sky provides the most direct mapping of the large scale structure in our Universe. After the first significant measurement of this *cosmic shear effect* by several groups in a few square degrees of sky (see Van Waerbeke et al. 2000; Wittman et al. 2000; Bacon et al. 2000; Kaiser et al. 2000), large efforts have been undertaken to increase the sky coverage (see e.g. Van Waerbeke et al. 2001; Hoekstra et al. 2002; Jarvis et al. 2003; Hetterscheidt et al. 2007; Benjamin et al. 2007) and to improve the accuracy of the necessary analysis techniques (see e.g. Erben et al. 2001; Bacon et al. 2000; Heymans et al. 2006; Massey et al. 2007; Bridle et al. 2009; Kitching et al. 2012a,b,c). In order to obtain the best possible precision on galaxy shapes, the first major requirement for shear measurement is image quality. Current weak lensing surveys are typically trying to measure galaxy shapes with a goal of residual systematics of the order of one percent of the cosmic shear signal (Heymans et al. 2012). The second major requirement is depth and multi-colour coverage so that photometric redshifts are reliable for the interpretation of the lensing signal (Hildebrandt et al. 2012). An important aspect combining image quality and survey depth is the number density of source galaxies for which shapes and photometric redshifts meet the requirements. In this article we present the CFHTLenS[1] data set which was carefully designed as a weak lensing survey within the CFHTLS. It spans 154 deg^2 in the five optical SDSS-like filters $u^*g'r'i'z'$. The survey was observed under the acronym CFHTLS-Wide and all data were obtained within superb observing conditions on the Canada-France-Hawaii Telescope (CFHT). Important cosmic shear results were already obtained on significant parts of the survey (see Hoekstra et al. 2006; Semboloni et al. 2006; Fu et al. 2008; Kilbinger et al. 2009; Tereno et al. 2009). However, these early results were based on the analysis of a single passband only.

During the later stages of CFHTLS-Wide observations, the CFHTLenS team was formed to combine this unique data set with the expertise of the team in the technical fields of data processing, shear analysis and photometric redshifts, as well as expertise to optimally exploit lensing and photometric redshift catalogues. The CFHTLenS data analysis effort is complemented by comprehensive simulations (Harnois-Déraps et al. 2012) to evaluate shear measurement algorithms and error estimates for cosmic shear analyses.

This article focuses on the presentation of the CFHTLenS data set and all the steps necessary to obtain the products required for weak lensing experiments. A comprehensive evaluation of how well our data products meet weak lensing requirements is given in the accompanying CFHTLenS articles Heymans et al. (2012), Miller et al. (2012) and Hildebrandt et al. (2012). This paper also describes the data products being publicly released to the astronomical community.

The paper is organised as follows: We give a short overview of the CFHTLenS data set in Sect. 2. Our lensing specialised data processing leading from `Elixir` preprocessed exposures to co-added imaging products is detailed in Sect. 3. Sections 4 and 5 summarise important astrometric and photometric quality characteristics of our data. A short summary on the released CFHTLenS data products and our conclusions wind up the main article. In the appendices we give detailed quality information on each individual CFHTLenS pointing (Appendix A) and provide *how-to* manuals for the public CFHTLenS imaging and catalogue products (Appendices B and C).

2 THE CANADA-FRANCE HAWAII TELESCOPE LENSING SURVEY DATA SET

The CFHTLenS data set is based on the Wide part of the CFHTLS, which was observed in the period between 22nd of March 2003 and 1st of November 2008. All the data were obtained with the MegaPrime instrument[2] (see Boulade et al. 2003) which is mounted on the CFHT. MegaPrime is an optical multi-chip instrument with a 9×4 CCD array (2048×4096 pixels in each CCD; $0\farcs187$ pixel scale; $\sim 1^\circ \times 1^\circ$ total field-of-view). CFHTLS-Wide observations were carried out in four high-galactic latitude patches: patch W1 with 72 pointings around RA=$02^{\rm h}18^{\rm m}00^{\rm s}$, Dec=$-07^{\rm d}00^{\rm m}00^{\rm s}$, patch W2 with 33 pointings around RA=$08^{\rm h}54^{\rm m}00^{\rm s}$, Dec=$-04^{\rm d}15^{\rm m}00^{\rm s}$, patch W3 with 49 pointings around RA=$14^{\rm h}17^{\rm m}54^{\rm s}$, Dec=$+54^{\rm d}30^{\rm m}31^{\rm s}$ and patch W4 with 25 pointings around RA=$22^{\rm h}13^{\rm m}18^{\rm s}$, Dec=$+01^{\rm d}19^{\rm m}00^{\rm s}$. CFHTLenS uses all CFHTLS-Wide pointings with complete colour coverage in the five filters $u^*g'r'i'z'$. This set comprises 171 pointings with an effective survey area of about 154 deg^2. The CFHTLS-Wide patch W2 has eight additional pointings with incomplete colour coverage. These are not included in CFHTLenS. The CFHTLenS survey layout is shown in Fig. 1. Pointings are labelled as W1m1p2 (read "W1 minus 1 plus 2"; see also Fig. 1). They indicate the patch and the separation (approximately in degrees) from the patch centre. For instance, pointing W1m1p2 is about one degree west and two degrees north of the W1 centre. The overlap of adjacent pointings is about $3\farcm0$ in right ascension and $6\farcm0$ in declination.

Table 1 contains observational details and provides average quality characteristics of our co-added CFHTLenS pointings. It lists the targeted observing time for the different filters, the mean limiting magnitudes and the mean seeing values with their corresponding standard deviations over all CFHTLenS pointings. The

[1] `http://www.cfhtlens.org/`

[2] `http://www.cfht.hawaii.edu/Instruments/Imaging/Megacam/`

[ht]

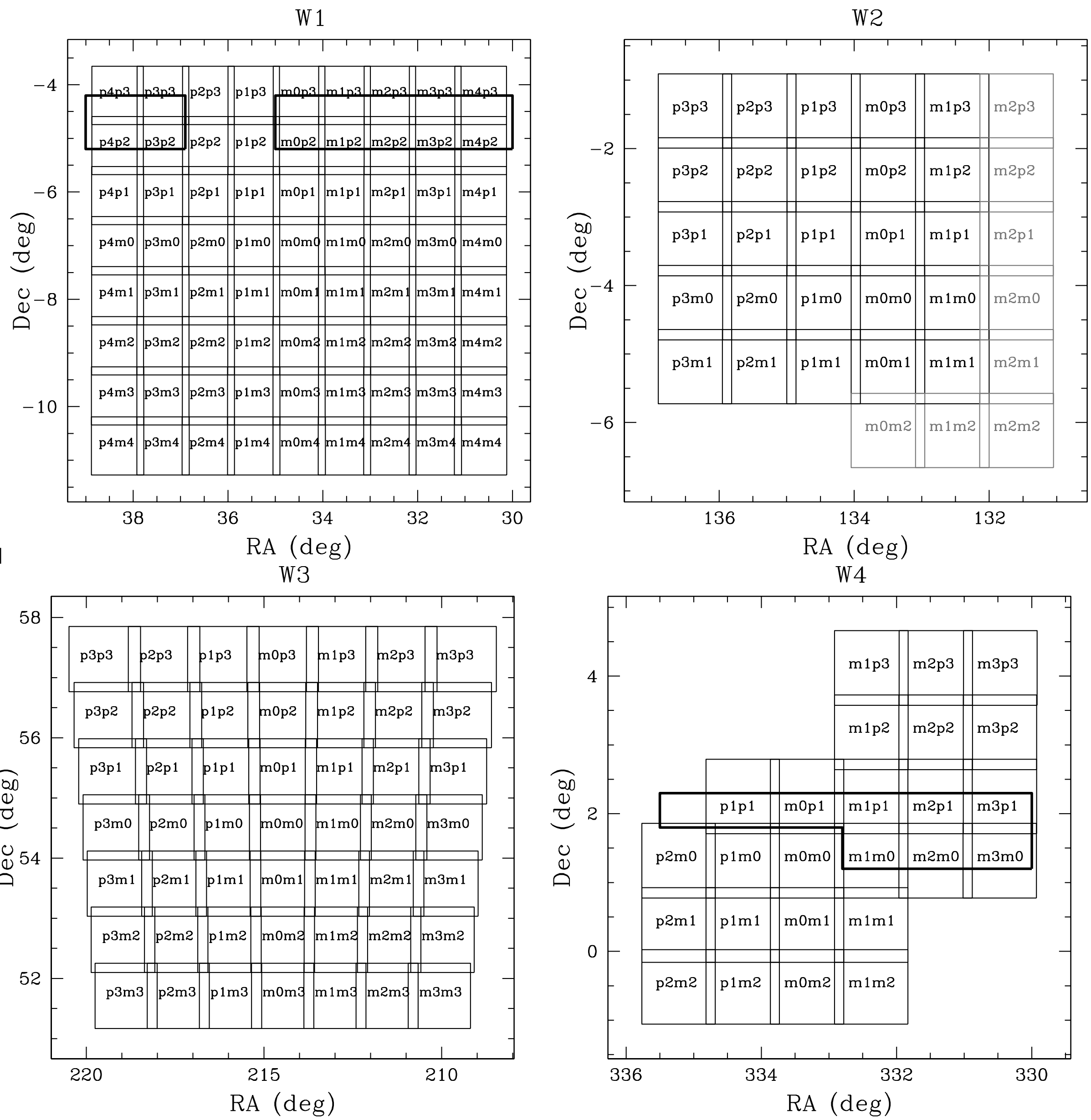

Figure 1. Layout of the four CFHTLenS patches. The gray pointings in the W2 region denote fields with incomplete colour coverage. They are not included in the CFHTLenS project. Enclosed areas in W1 and W4 indicate regions of available spectroscopic redshifts for a photometry crosscheck as discussed in Sect. 5.1. See text for further details.

seeing is estimated using the `SExtractor` (see Bertin & Arnouts 1996) parameter FWHM_IMAGE for stellar sources. Our limiting magnitude, $m_{\rm lim}$, is the 5-σ detection limit in a $2\farcs0$ aperture[3]. Nearly all 171 pointings in all filters were obtained under superb, photometrically homogeneous and sub-arcsecond seeing conditions (see also Table A1). In Fig. 2 we show the full seeing distribution for all fields and filters. It does not show the skewness to large values that is typical in large and long-term observing campaigns without imposed seeing constraints.

We note that the original CFHT i'-band filter (CFHT identification: i.MP9701) broke in 2008 and a total of 33 fields were obtained with its successor (CFHT identification: i.MP9702). 19 fields, whose PSF properties in the original i'-band observations were classified as problematic for weak lensing studies, have observations in both filters. If necessary we distinguish the two with labels i' for i.MP9701 and y' for i.MP9702. A table detailing important quality properties for each pointing and filter is given in Appendix A.

3 DATA PROCESSING

The primary goal of the image processing modules we created is to provide the following products, necessary for the weak lensing and photometric redshift analyses.

[3] $m_{\rm lim} = ZP - 2.5\log(5\sqrt{N_{\rm pix}}\sigma_{\rm sky})$, where ZP is the magnitude zeropoint, $N_{\rm pix}$ is the number of pixels in a circle with radius $2\farcs0$ and $\sigma_{\rm sky}$ the sky background noise variation.

Table 1. Characteristics of the final CFHTLenS co-added science data (see the text for an explanation of the columns).

Filter	expos. time [s]	$m_{\rm lim}$ [AB mag] 5-σ lim. mag. in a 2.″0 aperture	seeing [″]
$u^*(u.MP9301)$	5×600 (3000)	25.24 ± 0.17	0.88 ± 0.11
$g'(g.MP9401)$	5×500 (2500)	25.58 ± 0.15	0.82 ± 0.10
$r'(r.MP9601)$	4×500 (2000)	24.88 ± 0.16	0.72 ± 0.09
$i'(i.MP9701)$	7×615 (4305)	24.54 ± 0.19	0.68 ± 0.11
$y'(i.MP9702)$	7×615 (4305)	24.71 ± 0.13	0.62 ± 0.09
$z'(z.MP9801)$	6×600 (3600)	23.46 ± 0.20	0.70 ± 0.12

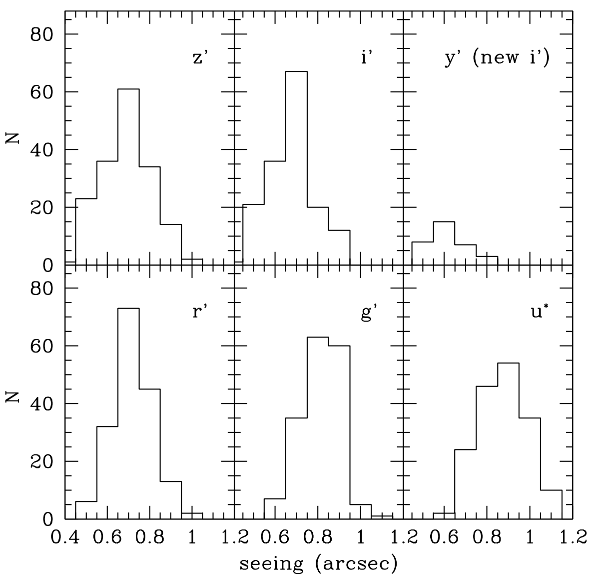

Figure 2. Seeing distributions for all CFHTLenS fields and filters.

(i) Deep, co-added astrometrically and photometrically calibrated images for all CFHTLenS pointings in each filter. These images are primarily used to define the source catalogue sample for our lensing studies and to estimate photometric redshifts; see Hildebrandt et al. (2012). A short summary can be found in Appendix C. Each co-added science image is accompanied by an inverse-variance *weight* map which describes its noise properties (see, e.g., Fig. 2 of Erben et al. 2009). In addition, we create a so-called *sum* image. This is an integer-value image which gives, for each pixel of the co-added science image, the number of single frames that contribute to that pixel. It is used to easily identify image regions that do not reach the full survey depth, such as areas around chip or edge boundaries.

(ii) For the i'-filter observations, which are used for our shape and lensing analysis, we require sky-subtracted individual chips that are not co-added. They are accompanied by bad-pixel maps, cosmic ray masks, and precise information of astrometric distortions and photometric properties. In connection with the object catalogues extracted from the co-added images, these products are primarily used by our `lensfit` weak shear measurement pipeline. The procedures to model the PSF and to determine object shapes on the basis of individual exposures are described in detail in Miller et al. (2012). The quality of the shear estimates is discussed in Heymans et al. (2012).

(iii) Each CFHTLenS science image is supplemented by a mask, indicating regions within which accurate photometry/shape measurements of faint sources cannot be performed, e.g. due to extended haloes from bright stars.

The methods and algorithms used to obtain the imaging products are heavily based on our developments within the CARS project (see Erben et al. 2009). In the following we give a thorough description of the steps that contain significant changes and improvements. The main differences concern data treatment on the patch-level within CFHTLenS; while for CARS we treated each survey pointing independently we now simultaneously treat all images within a patch. This optimally utilises available information to obtain a homogeneous astrometric and photometric calibration over the patch area. Our data processing is described in the following.

3.1 Data Retrieval from CADC

We start our analysis with the `Elixir`[4] preprocessed CFHTLS-Wide data available at the Canadian Astronomical Data Centre (CADC)[5]. Exposure lists for the CFHTLS surveys can be obtained from CFHT[6]. Besides the primary CFHTLS-Wide imaging data the catalogue lists, for each patch, exposures of an astrometric *presurvey*. This presurvey densely (re)covers the complete patch area with short (180s) r'-band exposures. The footprint for the presurvey fields is different from the science pointings to enable a good mapping of camera distortions. At the end of the survey each patch was similarly complemented with additional exposures obtained under photometric conditions in all filters. Each of these photometric *pegs* overlaps with four science pointings and helps to ensure a homogeneous photometric calibration on the patch level. Figure 3 outlines the available data for patch W4. The photometric pegs were not obtained under the primary CFHTLS programme but under the CFHT programme IDs 08AL99 and 08BL99. Using the relevant exposure IDs all data were retrieved from CADC. Besides the image list, the CFHTLS exposure catalogue also contains information on the conditions of the observations. Only data that are marked as either *completely within survey specifications* or as *having one of the predefined specifications (seeing, sky transparency or moon phase) slightly out of bounds*[7] enter the following process. We note that the availability of this quality information made laborious quality checks on each image unnecessary at this stage.

3.2 Processing of single exposures

In addition to raw data, CADC offers all CFHTLS images in `Elixir` preprocessed form. The `Elixir` processing (see Magnier & Cuillandre 2004) includes removal of instrumental signatures. This spans overscan- and bias subtraction, flatfielding, removal of fringing in i' and z', and photometric flattening across the MegaPrime field-of-view. In addition, each exposure comes with

[4] `http://www.cfht.hawaii.edu/Instruments/Elixir/`
[5] `http://www4.cadc-ccda.hia-iha.nrc-cnrc.gc.ca/cadc/`
[6] `http://www.cfht.hawaii.edu/Science/CFHTLS-DATA/exposureslogs.html`
[7] The conditions imposed on CFHTLS-Wide observations were: image quality (seeing)$\leqslant 0.''9$ for all filters, dark sky for u^* and g' observations and dark/gray moon phases for r', i' and z' images. Thin cirrus was accepted for the complete science campaign (Cuillandre, private communication).

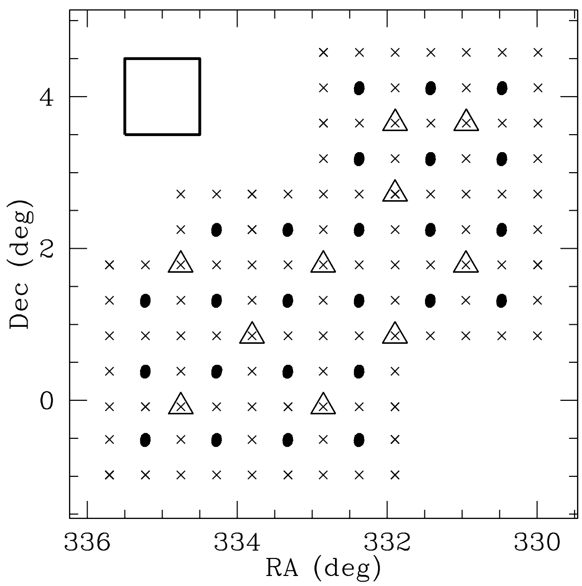

Figure 3. Available data in the W4 patch area: dots denote the centres of primary science observations, crosses indicate the centres of exposures of the astrometric presurvey and triangles mark the centres of additional photometric pegs. The square in the upper left corner shows the MegaPrime field-of-view.

photometric calibration information (zeropoint, extinction coefficient and colour term)[8].

Starting from the `Elixir` images, we perform the following processing steps (see Erben et al. 2009, for more details): (1) we identify and mark individual exposure chips that should not be considered any further using a FITS header keyword. This concerns chips that either contain no information (all pixel values equal zero) or are completely dominated by saturated pixels from a bright star. In contrast to CARS we do not automatically mark chips in other colours of a pointing as bad if the corresponding i'-band chip is flagged; (2) we create sky-subtracted versions of all chips with `SExtractor`; (3) we create a weight image for each science chip as outlined in Erben et al. (2005) and in detail for MegaPrime data in Sect. A.2 of Erben et al. (2009). As described in these publications, we aim for a complete identification of image artefacts on the level of individual chips to perform a weighted-mean co-addition of the data later-on. Cosmic rays in our data are detected with a neural network algorithm that utilises `SExtractor` with a special cosmic ray filter. This filter is constructed with the `EyE` program[9] (see Bertin 2001). In the course of our analysis we noted a significant confusion of stellar sources with cosmic rays in images obtained under superb seeing conditions. The effect is highly notable for a seeing below $\sim 0\farcs6$. In Sect. 4 we describe in detail how this confusion is treated; (4) Utilising the weight image we extract reliable, high S/N object catalogues from each chip (`SExtractor` DETECTION_MINAREA / DETECTION_THRESH is set to 5 / 5 for $g'r'i'y'z'$ and to 3 / 3 for u^*), which are used for our astrometric and photometric calibration. (5) Finally, we study the PSF properties of each chip by analysing bright, unsaturated stars with the Kaiser-Squires and Broadhurst (KSB) algorithm (see Kaiser et al. 1995). This is done primarily to reject images with badly behaved PSF properties such as a large stellar ellipticity at a later stage, see Sect. 3.3.

3.3 Astrometric and Photometric Calibration

The most significant difference between the CARS and the CFHTLenS data processing concerns the astrometric and photometric calibration. While we treated each pointing separately and independently in CARS, we now perform these calibration steps simultaneously for all exposures of a patch within CFHTLenS. By treating all available data at the same time we expect an increased homogeneity in astrometric and photometric properties of the data. The main pillar of this processing unit is the `scamp` programme[10] (see Bertin 2006), which is specifically designed for accurate astrometric and photometric calibration of large imaging surveys. The size of the survey that can be calibrated with `scamp` in a single step is only limited by computational resources, especially the main memory. We perform the following calibration steps:

(i) Our astrometric reference catalogues are 2MASS (see Skrutskie et al. 2006) for W1, W2 and W4 and SDSS-DR7 (see Abazajian et al. 2009) for W3. Unfortunately, the SDSS-DR7 only covered patch W3 completely and small parts of the other CFHTLenS areas.

(ii) The available computer equipment[11] allowed us to calibrate all exposures (primary science, astrometric presurvey, photometric pegs) from all filters of the smaller patches W2 and W4 simultaneously. Both patches consist of about 1000 individual MegaPrime exposures with 36 chips each. The larger patches W1 ($\sim$3000 exposures) and W3 ($\sim$2000 exposures) had to be split for our `scamp` runs. First, we separately process the r'-filter, which consists of science data in addition to the astrometric presurvey images. Next, the remaining filters u^*, g', i' and z' were individually calibrated together with the r'-band, so that each filter profited from the astrometric presurvey information. In addition to astrometric calibration, `scamp` uses sources from overlapping exposures to perform a *relative* photometric calibration. For each exposure, i, of a specific filter, f, we obtain a relative magnitude zeropoint, $ZP_{\rm rel}(i,f)$, giving us the magnitude offset of that image with respect to the mean relative zeropoint of all images. That is, we demand $\sum_i ZP_{\rm rel}(i,f) = 0$. Note that this procedure calibrates data obtained under photometric and non-photometric conditions on a

[8] See the CFHT web pages `http://www.cfht.hawaii.edu/Science/CFHTLS-DATA/dataprocessing.html` and `http://www.cfht.hawaii.edu/Science/CFHTLS-DATA/megaprimecalibration.html` for a more detailed description of the `Elixir` processing on CFHTLS data.

[9] See `http://www.astromatic.net/software/eye`. `EyE` produces detection filters for `SExtractor`. It is a neural network classifier specialised to be trained for the detection of small scale features in imaging data. A filter for cosmic rays can be obtained by using image simulations or real data with cosmic rays imposed on known image positions. Cosmic ray like features themselfs can be extracted from long exposed dark frames for instance. The MegaPrime `EyE` cosmic ray filter that we use for our analysis can be downloaded from `http://www.astromatic.net/download/eye/ret/megacam.ret`

[10] `http://www.astromatic.net/software/scamp`

[11] Our main processing machine is a 48 core AMD Opteron Processor (with a clock rate of 2100 MHz) computer installed at the University of British Columbia. The machine is equipped with 128GB of main memory from which we separate 100GB for a RAM disk. The RAM disk allows us to perform time-dominant I/O operations within the physical memory and to reach a high machine work load for nearly the complete data processing cycle.

relative scale. An absolute flux scaling for the patch can be obtained from the photometric subset; see below[12].

(iii) After the first `scamp` run we reject exposures suffering from an atmospheric extinction larger than 0.2 mag. We also remove images showing a large PSF ellipticity over the field-of-view. Large, homogeneous PSF anisotropies are mostly a sign of tracking problems during the exposure. All images that have a mean stellar ellipticity (the mean is taken over all chips of the image and it is estimated with the KSB algorithm) of 0.15 or larger are discarded from further analyses. Utilising the remaining images, we perform another `scamp` run to conclude the astrometric and relative photometric calibration of our data. For each patch and filter we manually verify the distributions of typical quality parameters (sky-background level, seeing, stellar ellipticity, relative photometric zeropoint). None of the plots showed suspicious images that should be removed at this stage. See Fig. 4 for an example of our patch-wide check plots.

(iv) The last step of the astrometric and photometric calibration is the determination of the absolute photometric zeropoint on the patch level. Input to our procedure are the relative zeropoints from `scamp`, photometric zeropoints and extinction coefficients from `Elixir`, and the list of exposures that were obtained under photometric conditions. Information on the sky-transparency of each image is included in the CFHTLS exposure catalogue (see Sect. 3.1). For all photometric exposures, i, in a filter, f, from a given patch, we calculate a *corrected zeropoint*, $ZP_{\rm corr}(i,f)$, according to

$$ZP_{\rm corr}(i,f) = ZP(i,f) + AM(i,f)EXT(i,f) + ZP_{\rm rel}(i,f),$$

where $ZP(i,f)$ is the instrumental AB zeropoint, $AM(i,f)$ the airmass during observation, and $EXT(i,f)$ is the colour-dependent extinction coefficient. For photometric data, the relative zeropoints compensate for atmospheric extinction and the corrected zeropoints agree within measurement errors. We iteratively estimate the mean $ZP(f) = \langle ZP_{\rm corr}(f)\rangle_i$ of all exposures, i, by rejecting 3-σ outliers. With more than 100 exposures marked as photometric in each patch and filter, this procedure ensures a robust estimation of the patch zeropoint. The final $ZP(f)$ is used as the absolute magnitude zeropoint for all co-added images of filter, f, in a particular patch.

We assess the quality of our astrometric and photometric calibration in Sect. 5.

3.4 Image Co-Addition and Mask Creation

In the subsequent analysis, co-added data are used in the detection of stars and galaxies and in the photometric measurements and analysis (Hildebrandt et al. 2012). Coadded data are not used for the lensing shear measurement (Miller et al. 2012). One of our main goals for the coadded images is to ensure data with homogeneous image quality. We therefore check for each pointing/filter combination whether the exposure set consists of images with large seeing variations. For instance our best seeing pointing W4m3p1 i'-band has a co-added image seeing of $0\farcs44$ though originally it has four individual exposures with image qualities of $0\farcs43$, $0\farcs47$, $0\farcs48$ and $0\farcs88$. To avoid *degradation* of the superb quality images below $0\farcs5$ with the image of $0\farcs88$ we want to reject the last image from the co-addition process. We estimate the median (med) of the seeing values of a pointing/filter combination and reject data that have a larger seeing than $med + 0.25$. In addition, for the i'-band data, which form the basis for our source catalogues, images with a seeing larger than $1\farcs0$ are not included in the co-addition process. Note that our procedure ensures homogeneity on the pointing/filter level and avoids rejection of data with fixed quality values on the patch level[13].

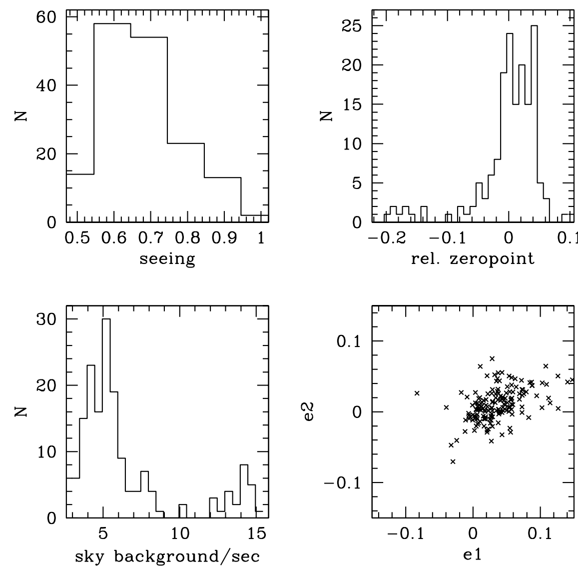

Figure 4. Quality parameter distributions of all 164 W4 i'-band exposures that enter the co-addition and science analysis stage. Shown are the seeing distribution (top left), the distribution of relative photometric zeropoints as determined by `scamp` (top right), the sky-background brightness in ADU/s (bottom left) and the two components of stellar PSF ellipticities (bottom right). All quantities are estimated as mean values over all 36 chips of a specific exposure. See the text for further details.

Finally, the sky-subtracted exposures belonging to a pointing/filter combination are co-added with the `swarp` programme[14] (see Bertin et al. 2002). We use the LANCZOS3 kernel to remap original image pixels according to our astrometric solutions. The subsequent co-addition is done with a statistically optimally weighted mean which takes into account sky-background noise, weight maps and the relative photometric zeropoints as described in Sect. 7 of Erben et al. (2005). As sky projection we use the TAN projection (see Greisen & Calabretta 2002). The reference points of the TAN projection for each pointing are those defined for the CFHTLS-Wide survey[15]. After co-addition we cut all images to a common size of $21k \times 21k$ around the image centre. This cut comprises areas with useful data for all CFHTLenS pointings. The

[12] `scamp` offers the possibility to internally perform a complete absolute photometric calibration and to finally calibrate/rescale all data to a predefined absolute magnitude zeropoint. The `scamp` default for this zeropoint is 30. We do not make use of this feature, mainly to be consistent with the original `THELI` data-flow (see Erben et al. 2005, 2009) and to preserve a *standard* scaling (ADU/s) for the pixel values of our co-added images.

[13] It is important to stress that the seeing selection for our co-added images is not propagated to the `lensfit` shear analysis, which is based on joint analysis of individual exposures (Miller et al. 2012). All i'-band exposures that have not been rejected by the end of the astrometric and photometric calibration process enter the `lensfit` shear analysis.

[14] `http://www.astromatic.net/software/swarp`

[15] see `http://terapix.iap.fr/cplt/oldSite/Descart/summarycfhtlswide.html`

swarp information and photometric zeropoints are also passed to the lensing shear analysis of the individual exposures, although a key part of the shear measurement is that the data are not interpolated onto a new reference frame when measuring galaxy shapes (Miller et al. 2012).

As a final step we use the automask tool[16] (see Dietrich et al. 2007) to create image masks for all pointings. These masking procedures are described in detail in Erben et al. (2009). Within CFHTLenS all 171 automatically generated masks are manually double-checked and, if necessary, refined. We note that the lensing catalogue quality assessment performed in Heymans et al. (2012) shows that lensing analyses with the automatic masks and the refined versions are consistent.

The result of this step are co-added science images for all 171 CFHTLenS pointings in all filters. Each science image is accompanied by a *weight* and a *sum* image as described in Sect. 3. These products, together with the sky-subtracted individual chip data and the astrometric information from scamp (see Sect. 3.3) form the basis for all CFHTLenS shear and photometric analyses.

4 INFLUENCE OF OUR COSMIC RAY REMOVAL ON STELLAR SOURCES

As discussed in Sect. 3.2, our procedure to identify cosmic rays in individual MegaPrime exposures is based on a neural network approach. During the weak lensing analysis with lensfit we noticed that a large number of individual exposures had very few stars suitable for PSF analysis. We traced the problem to the cores of point sources being misclassified and masked as cosmic rays. A closer analysis revealed that the problem was worst for the best seeing exposures and the neural network approach the primary source of the problem. In the following our main goal is to unflag bright, unsaturated stars suitable for PSF analyses with lensfit and PSF homogenisation within our photometric redshift (photo-z) analyses (see Hildebrandt et al. 2012). We explicitly note that we did not aim for a complete solution to the problem within CFHTLenS. Our prescription to identify and to unflag bright stars after the initial cosmic ray analysis is as follows: (1) We run SExtractor on individual exposure chips with a high detection threshold (DETECTION_MINAREA / DETECTION_THRESH is set to 10 / 10). This SExtractor run is performed without using weighting or flagging information. (2) Candidate stellar sources are identified on the stellar locus in the size-magnitude plane. (3) We perform a standard PSF analysis with the KSB algorithm. This involves estimating weighted second-order brightness moments for all candidate stars and to perform, on the chip level, a two-dimensional second order polynomial fit to the PSF anisotropy. The fit is done iteratively with outliers removed to obtain a clean sample of bright, unsaturated stars suitable for PSF analysis. (4) We remove cosmic ray masks in a square of $4x4$ pixels around stellar sources that are still included in our sample after step (3). Figure 5 shows the result of our analysis on pointing W1m2m1 in the i'-band. The set consists of seven exposures with an image quality between $0\farcs48$ and $0\farcs55$, including five images below $0\farcs5$. The figure shows the stellar locus of the co-added image before (left panel) and after (right panel) we modified the cosmic ray masks of individual exposures. We note that our procedure returns a significant number of stars to

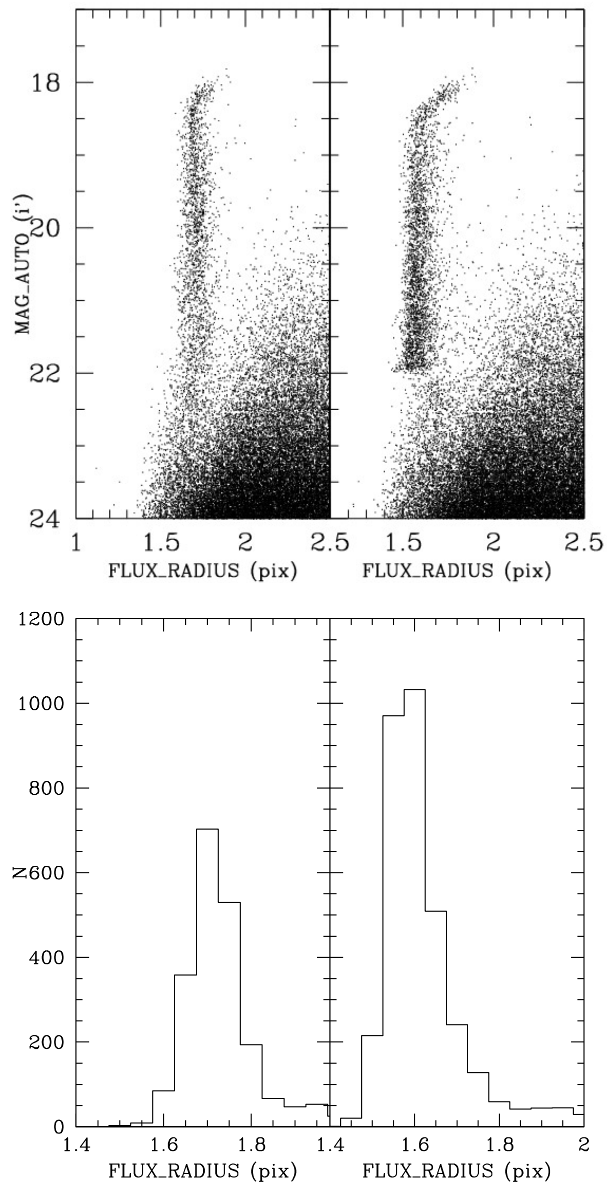

Figure 5. *Stellar break* in the co-added image of W1m2m1 i'-band, with a seeing of $0\farcs47$: Shown are stellar loci in the size-mag plane (SExtractor quantities FLUX_RADIUS and MAG_AUTO; top panels). The top left panel shows the stellar locus after our standard cosmic-ray removal procedure, the top right panel after we bring back stars whose cores were falsely classified as cosmic rays. The lower panels show corresponding histograms of object counts for $1.4 <$ FLUX_RADIUS < 2.0 and $i' < 22.0$. See text for further details.

the sample. In the corrected version we also see an abrupt break in the stellar locus at $i' \approx 22$. For our i'-band data this marks the limit to identify usable stars for PSF studies with our KSB approach, and we would need another procedure to also reliably identify fainter stars that are confused as cosmic rays. We would like to reiterate that our main goal within CFHTLenS is to have a sufficient number of bright, unsaturated stars for a reliable PSF analysis with lensfit, but none of our science projects requires complete and unbiased stellar samples down to faint magnitudes. We identified the *stellar break* problem to be immediately noticeable in images with a seeing of about $0\farcs6$ and better. This feature is more promi-

[16] http://marvinweb.astro.uni-bonn.de/data_products/THELIWWW/automask.html

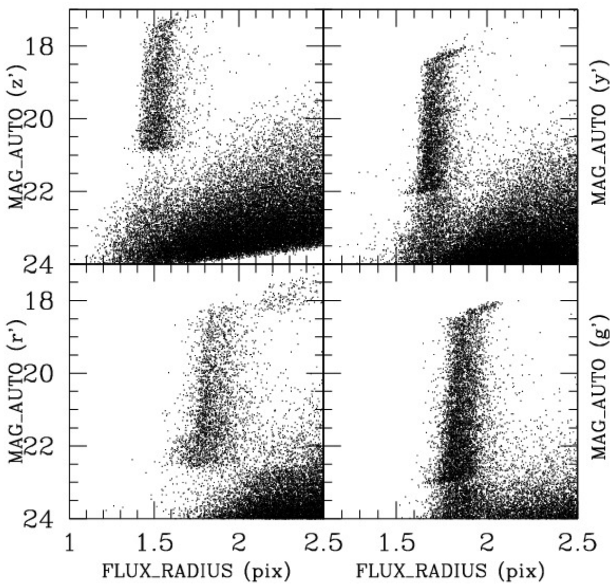

Figure 6. *Stellar break* in W1p4p1 z'-band (0.″46, top left), W3m2m1 y'-band (0.″51, top right), W1p4p1 r'-band (0.″52, bottom left) and W4p1p1 g'-band (0.″58, bottom right); see text for further details.

nent the better the image quality is. In the co-added images with overall seeing of 0.″7 - 0.″75 we can still identify stellar breaks if the set contains exposures in the best seeing range. In Fig. 6 we show prominent stellar breaks for $i' \approx 22$, $z' \approx 21$, $r' \approx 22.5$ and $g' \approx 23$. We do not observe obvious breaks in the loci of u^*, where the best quality coadd has an image seeing of 0.″62, and only some in g'. Fields with obvious stellar breaks are indicated in the comments column of Table A1. The judgement was done subjectively by manually checking stellar locus plots from all 171 CFHTLenS pointings. We specifically note that our cosmic ray removal procedure did not influence the detection nor the photometry of galaxies.

5 EVALUATION OF ASTROMETRIC AND PHOTOMETRIC PROPERTIES

Our data underwent substantial testing and quality control for our main scientific objective: weak gravitational lensing studies with photometric redshifts for all galaxies. The quality of our `lensfit` shear estimates and the accuracy of photometric redshifts are described in detail in Heymans et al. (2012) and Hildebrandt et al. (2012). These analyses have demonstrated the robustness of our data set. Here we mainly quote the precision we were able to achieve in our astrometric and photometric calibration.

To quantify our astrometric accuracy with respect to external sources we compare object positions in our CFHTLenS pointings with the SDSS-DR8 catalogue (see Aihara et al. 2011). Note that SDSS-DR8[17] was not used as an external astrometric catalogue for our astrometric calibration. It only became available after our data processing was completed. It is the first SDSS catalogue that covers all but ten CFHTLenS pointings. The fields without SDSS-DR8 overlap are W1p3m4, W1p4m4 and the eight W2 pointings south of -4 degrees in declination (see Fig. 1). Figure 7 summarises our astrometric accuracy compared to the SDSS reference. We compare the position of SDSS stellar sources with $i_{\rm SDSS} < 21$ to each pointing and filter . Object positions in our data were estimated independently for each filter in the corresponding co-added images. The star classification was taken from the SDSS catalogue. Figure 7 shows the mean deviation (the mean is taken over all sources in all filters in a patch) of positions and the standard deviation of the positional differences. We see that the CFHTLenS data show a systematic offset in right ascension and declination of less than 0.″2 in all cases but one. We note however that the SDSS team acknowledges a systematic offset of 250 mas in declination for Dec $> +41$ degrees in the SDSS-DR8 catalogue[18]. This affects patch W3 at a declination of Dec $\approx +54$ deg. The standard deviation is uniform over all fields and the its distribution peaks at about 50-70 mas for all CFHTLenS patches.

In Figs. 8 and 9 we quantify the internal astrometric accuracy, comparing positions of sources observed in different filters of all pointings. We use objects with $i'_{CFHTLenS} < 21$ that are classified as stars by `SExtractor` (`CLASS_STAR`> 0.95). The sources were extracted from the co-added images. Figure 8 shows positional differences *within* individual CFHTLenS pointings. We see that we cannot detect significant systematic offsets in right ascension and declination between the colours. The rms positional difference between the filters is about 30 mas. In Fig. 9 we show positional differences with sources on *different* CFHTLenS pointings. As before, we match objects regardless of their filter, but only allow associations from different, adjacent CFHTLenS pointings. We only show the W1 comparison here – results are similar for the other patches. The error parameters are comparable to the *inter-pointing* comparison. Absolute positional differences are evenly distributed around zero and the rms deviations are $\sigma(\Delta{\rm RA}) = 0.''030$ and $\sigma(\Delta{\rm Dec}) = 0.''027$.

The photometric calibration of CFHTLenS is also evaluated by direct comparison to SDSS-DR8. The availability of SDSS data nearly overlapping the full CFHTLenS area allows us to obtain a comprehensive understanding of the photometric quality of our data. We would like to reiterate that the SDSS data were not used at any stage of the data calibration phase.

We compare SDSS magnitudes of stellar objects with $i_{\rm SDSS} < 21$ with their CFHTLenS counterparts. To convert stellar CFHTLenS AB magnitudes to the SDSS system we use the relations:

$$
\begin{aligned}
u^*_{\rm AB} &= u_{\rm SDSS} - 0.241 \cdot (u_{\rm SDSS} - g_{\rm SDSS}), \\
g'_{\rm AB} &= g_{\rm SDSS} - 0.153 \cdot (g_{\rm SDSS} - r_{\rm SDSS}), \\
r'_{\rm AB} &= r_{\rm SDSS} - 0.024 \cdot (g_{\rm SDSS} - r_{\rm SDSS}), \\
i'_{\rm AB} &= i_{\rm SDSS} - 0.085 \cdot (r_{\rm SDSS} - i_{\rm SDSS}), \\
y'_{\rm AB} &= i_{\rm SDSS} + 0.003 \cdot (r_{\rm SDSS} - i_{\rm SDSS}), \\
z'_{\rm AB} &= z_{\rm SDSS} + 0.074 \cdot (i_{\rm SDSS} - z_{\rm SDSS}).
\end{aligned} \tag{1}
$$

The relations for $g'r'i'z'$ were determined within the CFHTLS-Deep Supernova project[19]; the u^* transformation comes from the

[17] SDSS-DR8 is a complete reprocessing of the entire SDSS data with improved processing techniques (`http://www.sdss3.org/dr8/`). It is therefore also an independent test set for W3 which was astrometrically calibrated with SDSS-DR7.

[18] `http://www.sdss3.org/dr8/algorithms/astrometry.php#caveats`

[19] see `http://www.astro.uvic.ca/~pritchet/SN/Calib/ColourTerms-2006Jun19/index.html#Sec04`

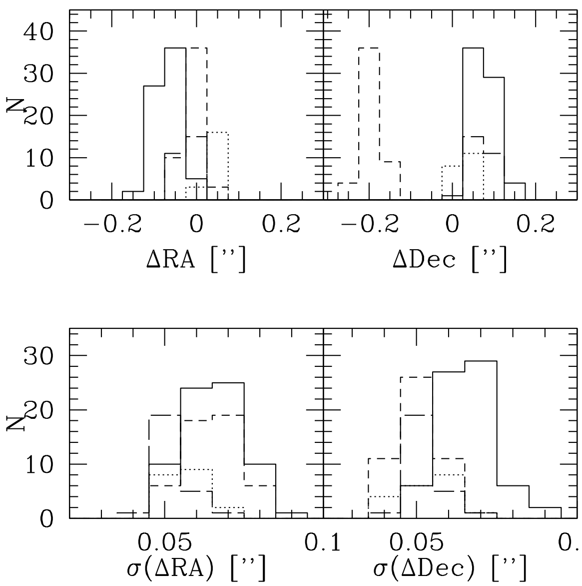

Figure 7. Astrometric comparison with SDSS-DR8: Shown are object position comparisons between CFHTLenS sources in all pointings and all filters with SDSS $i_{\rm Sloan} < 21$ stars. Solid, dotted, short-dashed and long-dashed histograms show comparisons of W1, W2, W3 and W4 respectively. See text for further details.

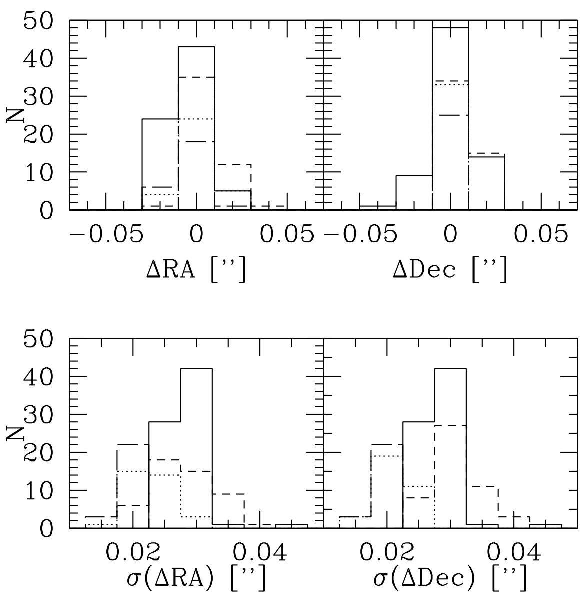

Figure 8. Internal astrometric accuracy: Shown are internal astrometric positional differences between the different filters *within* individual CFHTLenS pointings. Solid, dotted, short-dashed and long-dashed histograms show comparisons of W1, W2, W3 and W4 respectively. See text for further details.

CFHT instrument page[20] and the y' equation was determined

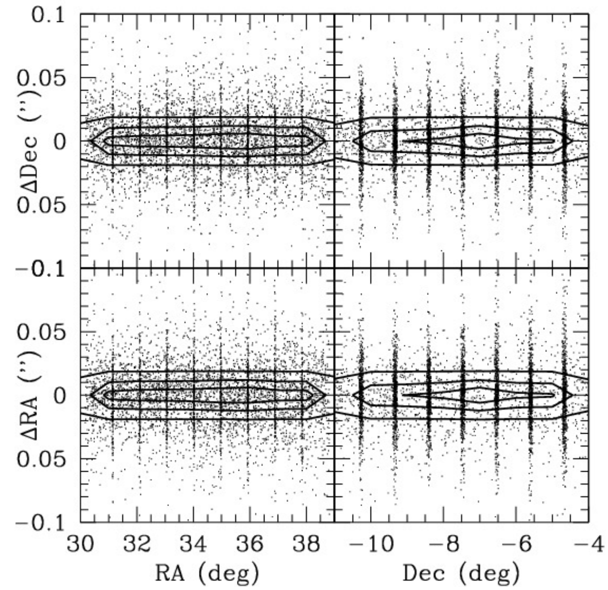

Figure 9. Internal astrometric accuracy on overlap sources in W1: We show positional differences between object matches of CFHTLenS sources in *different*, adjacent pointings. The comparison is done in W1 across all filters. Vertical stripes in the density distribution originate from the alignment of overlap regions; see Fig. 1. Contours indicate areas of 0.7, 0.4, and 0.05 times the peak-value of the point-density distribution. For clarity of the plot, only 1 point out of 100 is visualised. See text for further details.

within the MegaPipe project[21] (Gwyn 2008). Magnitude comparisons on an object by object basis for one randomly chosen field in each patch are shown in Fig. 10. We see that the comparisons show a dispersion of about $0.03 - 0.06$ magnitudes. Figure 11 shows the distribution of mean offsets in all pointings of the W1 area. The results are similar for the other patches. The offset distribution strongly peaks below $|\Delta m| \approx 0.04$ for g', r', i' and y'. It is significantly broader in u^*, and z' peaks at around $\Delta m \approx -0.05$. As can be seen in Fig. 10, the relation between $z'_{\rm AB}$ and $z_{\rm SDSS}$ leads to a significant spread on an object by object basis. In rare cases we observe larger deviations between SDSS and CFHTLenS magnitudes of up to $|\Delta m| \approx 0.1$. A detailed list of the offsets for all CFHTLenS fields with SDSS overlap is given in Table A1.

Given the results from the SDSS-DR8 comparison, we summarise accuracies for the individual patches and filters in Table 2. We quote the mean of all average deviations in the individual pointings and their corresponding standard deviation. The values indicate that we obtain on average a homogeneous calibration of our data. This result is confirmed by the quality of our photometric redshifts presented in Hildebrandt et al. (2012). Since then we were able to further test our photo-z estimates with new spectroscopic redshifts on a significant part of the CFHTLenS area. This additional confirmation for the robustness of our photometry is described in the next section.

[20] see http://cfht.hawaii.edu/Instruments/Imaging/MegaPrime/generalinformation.html

[21] see http://www3.cadc-ccda.hia-iha.nrc-cnrc.gc.ca/megapipe/docs/filters.html

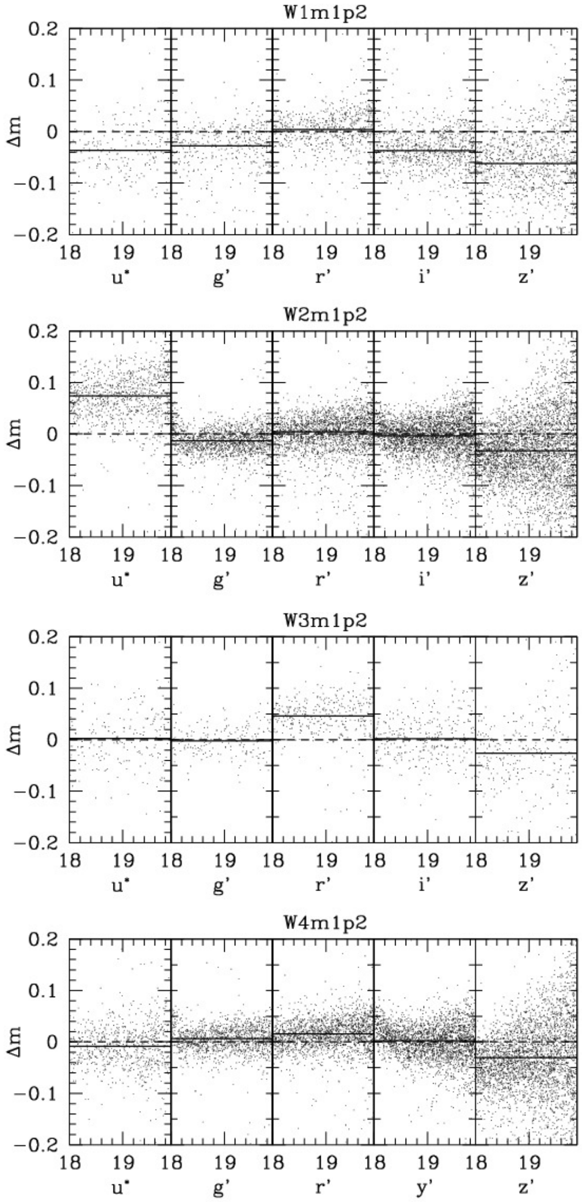

Figure 10. Magnitude comparisons between SDSS stars with and CFHTLenS sources for the fields Wxm1p2 with $x \in \{1, 2, 3, 4\}$. Solid horizontal lines indicate $\langle \Delta m \rangle$. The precise values of the mean offsets and formal standard deviations can be found in Table A1. Note that W4 and W2 are at significantly lower galactic latitude than W1 and W3, thus the stellar density in the latter two is substantially lower.

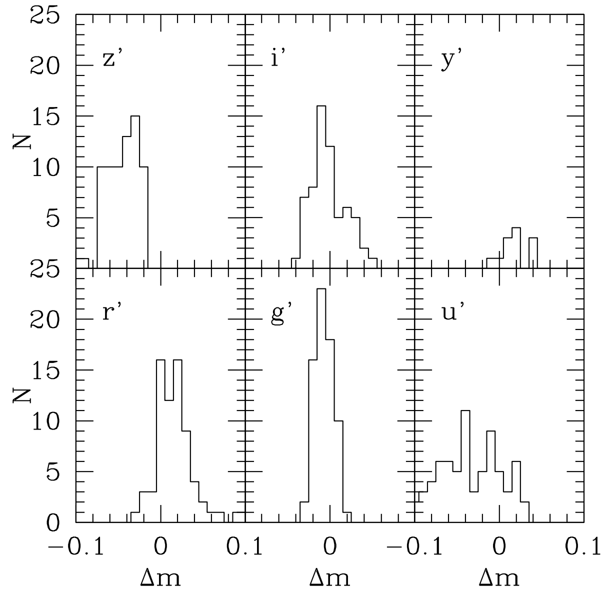

Figure 11. Distribution of the differences between SDSS and CFHTLenS magnitudes in W1. The abscissa of the plots show $\Delta m = m_{\rm CFHTLenS} - m_{\rm SDSS}$. See text for further details.

Table 2. Average photometric accuracies in the CFHTLenS patches

Patch	Filter	phot. accuracy	Patch	Filter	phot. accuracy
W1	u^*	-0.034 ± 0.035	W1	i'	-0.002 ± 0.020
W2	u^*	$+0.034 \pm 0.031$	W2	i'	-0.009 ± 0.020
W3	u^*	-0.046 ± 0.043	W3	i'	$+0.003 \pm 0.015$
W4	u^*	-0.001 ± 0.014	W4	i'	-0.003 ± 0.021
W1	g'	-0.007 ± 0.011	W1	y'	-0.019 ± 0.015
W2	g'	$+0.005 \pm 0.013$	W2	y'	-0.021 ± 0.023
W3	g'	-0.007 ± 0.012	W3	y'	-0.002 ± 0.023
W4	g'	-0.002 ± 0.010	W4	y'	$+0.022 \pm 0.048$
W1	r'	$+0.017 \pm 0.024$	W1	z'	-0.045 ± 0.018
W2	r'	$+0.013 \pm 0.012$	W2	z'	-0.054 ± 0.012
W3	r'	$+0.022 \pm 0.014$	W3	z'	-0.040 ± 0.017
W4	r'	$+0.014 \pm 0.006$	W4	z'	-0.030 ± 0.017

5.1 Comparison of CFHTLenS photo-z with spectroscopic redshifts

The derivation of the CFHTLenS photo-z is detailed in Hildebrandt et al. (2012), where we compared the photo-z to spectroscopic redshifts (spec-z) from VVDS (Le Fèvre et al. 2005), DEEP2 (Davis et al. 2007), and SDSS-DR7 on 20 of the 171 CFHTLenS fields. More spec-z have since become available through the VIMOS Public Extragalactic Redshift Survey (VIPERS; see Guzzo et al. 2013, in preparation)[22]. In this paper we study how the CFHTLenS photo-z compare to VIPERS on 22 additional fields independent from the 20 fields tested in Hildebrandt et al. (2012).

Figure 12 shows a direct comparison of the CFHTLenS photo-z versus VIPERS spec-z of 18 995 objects. Note that the VIPERS spec-z catalogue is pre-selected by colour, targeting mostly objects in the range $0.5 \lesssim z \lesssim 1.2$ down to $i' \approx 22.5$. We estimate photo-z statistics (scatter, outlier rate, bias, and completeness) as a function of i'-band magnitude and redshift in the same way as described in Hildebrandt et al. (2012). The results are shown in Figs. 13 and 14. Comparing to the performance of the CFHTLenS photo-z vs. VVDS/DEEP2/SDSS spec-z we do not find any significant differences in the magnitude range ($i' \lesssim 22.5$) and redshift range ($0.5 \lesssim z \lesssim 1.2$), where VIPERS spec-$z$ are available.

This test suggests that the photo-z accuracy (and hence also the photometry) is stable over the survey area, beyond the fields that could be tested with the original spec-z catalogues. Having such a successful blind test - a posteriori - is a strong argument for the stability of our global photometry, and confirms that the photo-z statistics presented in Hildebrandt et al. (2012) can be assumed for the whole survey with a greater degree of confidence.

[22] http://vipers.inaf.it

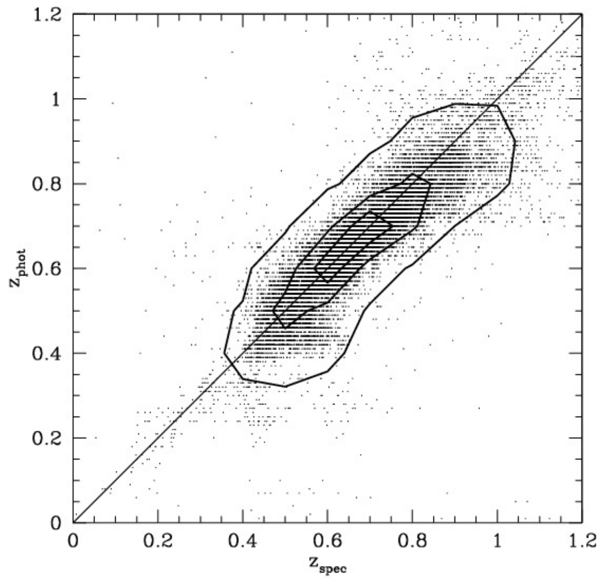

Figure 12. Photo-z vs. spec-z for the 22 CFHTLenS fields with VIPERS overlap. Shown are all objects with secure spec-z. No magnitude cut is applied. Contours indicate regions around 0.7, 0.4, and 0.05 times the peak-value of the point-density distribution.

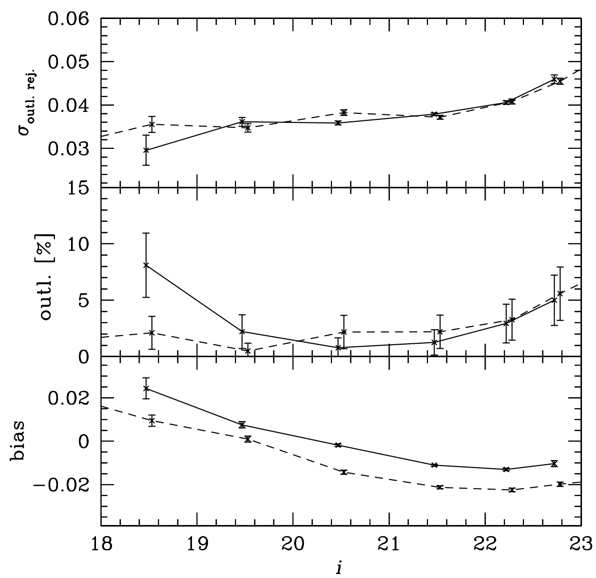

Figure 13. Photo-z statistics as a function of magnitude. The top panel shows the photo-z scatter after outliers were rejected, the middle panel shows the outlier rate, and the bottom panel shows the bias (outliers included; positive means photo-zs overestimate the spec-zs). Errors are purely Poissonian. Note that the errors between magnitude bins are correlated. The solid curve shows statistics for the analysis of this article. For comparison we also show corresponding measurement from Hildebrandt et al. (2012) (dashed curve).

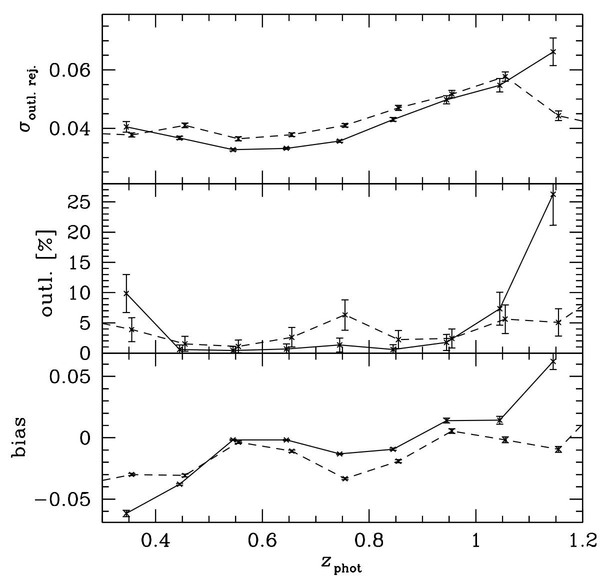

Figure 14. Similar to Fig. 13 but here statistics are a function of photo-z. We only plot the redshift interval where VIPERS yields a sufficient number of spec-z. The solid curve shows statistics for the analysis of this article. For comparison we also show corresponding measurement from Hildebrandt et al. (2012) (dashed curve).

5.2 Galaxy Correlation Functions on Large Angular Scales

As a further test for the photometric homogeneity of our data beyond individual pointings we investigate the galaxy correlation function out to large angular scales. The behaviour of the large-scale galaxy angular correlation function, $w(\theta)$, is a sensitive diagnostic test of large-scale systematic photometric gradients in an imaging dataset. Such photometric gradients would cause systematic density variations in a source sample selected above a given flux threshold. Since the random comparison datasets used to estimate $w(\theta)$ are generated assuming a uniform source density, any such gradient will result in an excess of signal in the large-scale $w(\theta)$ such that it does not asymptote to zero. In contrast to the tests described above, we here use our patch-wide science object catalogues described in Hildebrandt et al. (2012) and Appendix C. We use all galaxies down to $i' = 22$, which results in the following sample sizes: 656 998 galaxies in W1, 217 359 in W2, 483 333 in W3 and 189 209 in W4. The random comparison catalogues in each patch have four times the corresponding object count.

We measure $w(\theta)$ for all four CFHTLenS regions in 30 logarithmic angular bins between 0.003 and 3 degrees with the Landy & Szalay (1993) estimator. We restrict the sample to objects with star-galaxy classifier $\mathtt{star\_flag} = 0$ and $\mathtt{MASK} = 0$ (see Appendix C), and consider three magnitude thresholds $i' < (20, 21, 22)$. The integral constraint correction is applied to the correlation functions. We determine the errors in the measurement using jack-knife re-sampling. The jack-knife samples are extended across all four regions such that each sample has a characteristic size of 3 degrees; 54 jack-knife samples are used in total. We note that the measurements in the different CFHTLenS regions produce consistent results within the expectation of cosmic variance, with the dispersion between the regions becoming minuscule at small angular scales.

The combined correlation function measurements of the four patches are plotted in Fig. 15 and compared to the predictions of

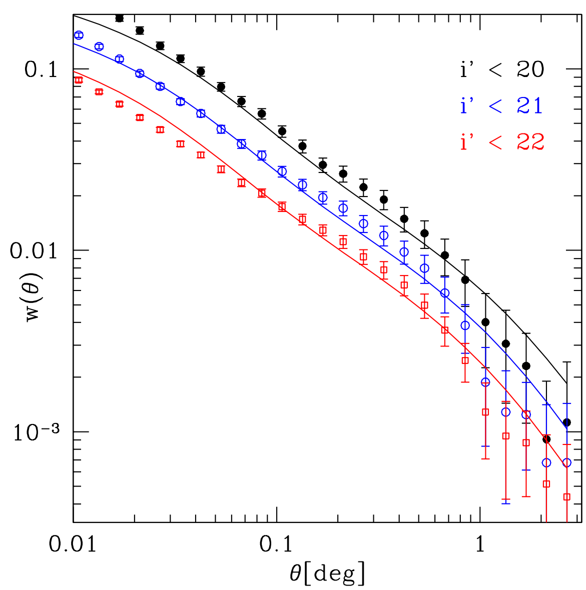

Figure 15. Combined angular galaxy correlation functions for CFHTLenS patches W1 to W4; see text for further details.

a ΛCDM cosmological model following Smith et al. (2003). This prediction is generated from a CAMB (see Lewis et al. 2000) + halofit non-linear power spectrum (produced using cosmological parameters consistent with the latest CMB measurements), combined with galaxy redshift distributions produced by stacking the photometric redshift probability distributions at each magnitude threshold, and assuming a linear galaxy bias factor $b \sim 1.2$. The measurements are consistent with the model at large scales, and tend to zero there, revealing no evidence for systematic photometric gradients in the sample. The model is not expected to be a good match to the data at scales below $1\mathrm{Mpc}/h_{72}$[23], where non-linear and halo model effects become important.

We stress that we present this analysis primarily to further strengthen confidence in the integrity of our photometric catalogues. We do not want to present an in-depth investigation of the angular galaxy correlation function or to interpret it scientifically. This will be done in Bonnett et al. (in preparation).

6 RELEASED DATA PRODUCTS

In the spirit of the CFHTLS we make all data used for scientific exploitation by the CFHTLenS team available to the astronomical community. The released data package includes:

(i) The co-added CFHTLenS pixel data products consisting of primary science data, weight- and flag-maps, sum frames and image masks. All these products are introduced and described in Sect. 3.4. Important details for potential users are provided in Appendix B.

(ii) The CFHTLenS source catalogues with all relevant photo-z and lensing/shear quantities. The creation of these catalogues is described in Hildebrandt et al. (2012) and Miller et al. (2012). The catalogue entries are described in Appendix C.

[23] $1\mathrm{Mpc}/h_{72}$ subtends about 0.04 degree at the median redshift ($z_{\mathrm{med}} \approx 0.7$) of CFHTLenS.

The data are made available by CADC through a web interface and can be found at: `http://www.cadc-ccda.hia-iha.nrc-cnrc.gc.ca/community/CFHTLens/query.html`. The interface allows users to retrieve image pixel data on a pointing/filter basis. The catalogues can be accessed with a sky-coordinate query form with filter options on all catalogue entries.

7 CONCLUSIONS

We have presented the CFHTLenS data products that originate from the CFHTLS-Wide survey. CFHTLS-Wide was specifically designed as a weak lensing survey providing deep, high quality optical data in five passbands. Prior to the scientific exploitation of the data, the CFHTLenS collaboration had the objective to develop and to thoroughly verify all necessary algorithms and tools in order to fully exploit the survey. This development includes numerous refinements to existing data processing techniques, in particular an optimal treatment in the astrometric and photometric calibration phase. Another important upgrade of our analysis was to develop an algorithm to nearly automatically perform the important image masking task. Hitherto, it has mainly been performed manually. It is important to stress that specific, high-precision scientific applications such as our weak lensing analyses generally require very specific data processing steps. These often tend to be in conflict with a *general-purpose* data set which needs to fulfil the requirements of diverse scientific applications. Where necessary, our data processing was heavily specialised to analyse small and faint background sources that are essential for all weak lensing studies. This affects for instance our sky-background subtraction which aims for a *local* sky-background as flat as possible on small angular scales. Furthermore, our treatment of cosmic rays has been optimised for a robust identification of cosmic ray hits on the basis of individual images. This was crucial for the `lensfit` shear pipeline which entirely operates on single frames instead of the co-added images. As described in Sect. 4, our current implementation leads to a strong incompleteness of stellar counts at faint magnitudes. For this reason the CFHTLenS data is complementary to other publicly released versions of the CFHTLS-Wide Survey[24].

We have demonstrated that we are able to produce a homogeneous and high-quality data set suitable for weak lensing studies with photometric redshift estimates. Our external astrometric accuracy with respect to SDSS data is around 60-70 mas, the internal alignment in all filters is around 30 mas. Our average photometric calibration shows a dispersion with respect to SDSS on the order of 0.01 to 0.03 mag for g', r', i' and z' and about 0.04 mag for u^*. We show in Heymans et al. (2012), Miller et al. (2012) and Hildebrandt et al. (2012) that our data have the necessary quality to fully exploit the scientific potential of a 154 deg^2 weak lensing survey.

The newly available SDSS-DR8 data which, covering almost the complete CFHTLenS area, will allow us to further refine our algorithms and procedures in the future, especially increasing the quality of our photometry. This will be particularly useful in preparation for the next generation of weak lensing surveys that will

[24] The CFHTLS releases of Terapix (see `terapix.iap.fr`) and the MegaPipe effort (see Gwyn 2008) can be obtained at `http://www3.cadc-ccda.hia-iha.nrc-cnrc.gc.ca/cfht/cfhtls_info.html`.

cover substantial parts of the sky, such as the 1500 $\deg^2$ Kilo-Degree Survey[25] (de Jong et al. 2012) or the 5000 $\deg^2$ Dark Energy Survey[26] (Mohr et al. 2012). For these surveys the accuracy of current algorithms certainly needs to be further improved to exploit their full scientific potential and to not be dominated by residual systematics.

In the hope that we will trigger a variety of new developments and follow-up studies with the CFHTLenS products, we make the complete data set, consisting of pixel data and object catalogues with all relevant lensing and photo-z quantities, publicly available via CADC.

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[25] `http://kids.strw.leidenuniv.nl/`
[26] `http://www.darkenergysurvey.org/`

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APPENDIX A: CFHTLenS POINTING QUALITY INFORMATION

In Table A1 we provide detailed information about the characteristics of all CFHTLenS fields. It contains the effective area of each field after image masking (MASK $=$ 0 areas; see Sect. 3.4), the number of individual images contributing to each stack, the total exposure time, the limiting magnitude as defined in Sect. 2, magnitude comparisons with SDSS as described in Sect. 5, the measured image seeing and special comments. We note again that the magnitude comparison is based on object catalogues extracted from each individual CFHTLenS pointing. The magnitude used for the comparison is the `SExtractor` quantity `MAG_AUTO` for all filters. We do not show direct magnitude comparisons with the CFHTLenS catalogues described in Appendix C. We have verified that differences of the `MAG_`x with $x \in \{u, g, r, i, y, z\}$ quantity in the CFHTLenS catalogues are close to the values quoted here.

In the comments field of Table A1 we use the following abbreviations:

- **no ch. XX:** The stack contains no data around chip position(s) XX. We number the MegaPrime mosaic chip from left to right and from bottom to top. The lower left (east-south) chip has number 1, the lower right (west-south) chip number 9 and the upper-right (west-north) chip number 36. Note that this labeling scheme differs from that used at CFHT.
- **obv. st. break:** The stellar locus in a size vs. magnitude diagram shows a clear *stellar break* as discussed in Sect. 4. The judgement was done on a subjective basis by visually inspecting FLUX_RADIUS vs. MAG_AUTO diagrams for all pointings and filters.
- **WL pass:** The field passes the CFHTLenS *Weak Lensing Field Selection* as described in Sect. 4.2 of Heymans et al. (2012).

Table A1: CFHTLenS data quality overview: Magnitude offsets are given as $\Delta m = m_{\mathrm{CFHTLenS}} - m_{\mathrm{SDSS}}$. See the text for more details.

Field/Area [sq. deg.]	Filter	N	expos. time [s]	m_{lim} [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
W1m0m0	u^*	5	3000.26	25.17	-6.8 ± 4.0	0.78	
(0.76)	g'	5	2500.37	25.44	-1.7 ± 2.4	0.78	
	r'	4	2000.34	25.00	-0.5 ± 3.1	0.64	
	i'	8	4920.69	24.54	-0.3 ± 3.3	0.63	WL pass
	z'	6	3600.46	23.17	-2.9 ± 4.9	0.92	
W1m0m1	u^*	5	3000.21	25.39	-1.8 ± 3.6	1.00	
(0.80)	g'	5	2500.33	25.71	-0.9 ± 2.2	0.86	
	r'	4	2000.28	24.95	-0.0 ± 2.5	0.71	
	i'	7	4305.44	24.59	-0.3 ± 3.0	0.50	obv. st. break
	z'	6	3600.59	23.42	-2.4 ± 5.2	0.90	
W1m0m2	u^*	5	3000.39	25.35	-3.5 ± 3.4	1.05	
(0.84)	g'	5	2500.37	25.61	-1.5 ± 2.0	0.67	
	r'	2	1000.09	24.67	1.4 ± 2.9	0.81	
	i'	7	4305.67	24.75	2.8 ± 2.8	0.64	obv. st. break
	z'	6	3600.37	23.38	-2.1 ± 4.7	0.61	
W1m0m3	u^*	5	3000.20	25.35	-2.9 ± 4.9	0.94	
(0.89)	g'	8	4000.75	25.68	-0.3 ± 2.4	0.84	
	r'	4	2000.21	24.95	2.1 ± 2.6	0.76	
	i'	7	4305.46	24.60	4.6 ± 2.9	0.68	WL pass
	z'	6	3600.52	23.40	-4.0 ± 3.9	0.69	
W1m0m4	u^*	5	3000.22	25.19	-4.7 ± 4.0	0.79	
(0.85)	g'	5	2500.26	25.77	0.2 ± 2.0	0.89	
	r'	4	2000.23	24.91	1.9 ± 2.6	0.68	
	y'	7	4305.58	24.56	1.0 ± 3.1	0.65	WL pass
	z'	6	3600.26	23.54	-7.0 ± 4.3	0.52	obv. st. break
W1m0p1	u^*	5	3000.51	25.28	-5.1 ± 4.3	1.00	
(0.72)	g'	5	2500.45	25.56	-1.9 ± 2.1	0.94	
	r'	5	2500.36	25.09	-0.5 ± 2.7	0.73	
	i'	7	4305.67	24.66	-2.9 ± 3.1	0.85	WL pass
	z'	11	6601.19	23.84	-6.6 ± 4.3	0.76	
W1m0p2	u^*	5	3000.58	25.36	-6.1 ± 5.3	0.99	
(0.79)	g'	7	3500.46	25.69	-0.9 ± 3.5	0.94	
	r'	4	2000.31	24.97	0.5 ± 2.9	0.85	
	i'	7	4305.66	24.72	-3.6 ± 4.0	0.74	obv. st. break; WL pass
	z'	10	6000.83	23.66	-5.2 ± 5.0	0.80	
W1m0p3	u^*	5	3000.58	25.24	-6.8 ± 5.0	0.94	
(0.78)	g'	5	2500.49	25.58	-0.5 ± 3.4	0.86	
	r'	4	2000.27	24.88	1.3 ± 3.0	0.88	
	i'	7	4305.65	24.65	-3.1 ± 3.3	0.75	WL pass
	z'	10	6000.84	23.62	-6.6 ± 6.2	0.82	
W1m1m0	u^*	5	3000.30	25.29	-4.6 ± 4.1	0.94	
(0.85)	g'	5	2500.34	25.50	-1.8 ± 2.4	0.68	
	r'	4	2000.27	24.92	0.3 ± 3.2	0.62	obv. st. break
	i'	7	4305.55	24.43	-0.2 ± 2.9	0.57	WL pass
	z'	6	3600.43	23.34	-2.5 ± 5.1	0.79	
W1m1m1	u^*	5	3000.26	25.39	-13.2 ± 4.4	0.67	
(0.80)	g'	5	2500.28	25.60	-2.2 ± 2.3	0.58	
	r'	4	2000.27	24.89	1.4 ± 2.5	0.83	
	i'	7	4305.30	24.66	0.4 ± 2.9	0.54	obv. st. break
	z'	6	3600.50	23.31	-2.5 ± 5.0	0.83	
W1m1m2	u^*	5	3000.27	25.27	-6.2 ± 3.6	0.77	
(0.81)	g'	5	2500.44	25.58	-1.1 ± 2.0	0.60	obv. st. break
	r'	4	2000.32	24.89	2.9 ± 4.7	0.61	obv. st. break
	i'	8	4920.80	24.66	2.9 ± 2.7	0.77	WL pass
	z'	6	3600.49	23.34	-1.8 ± 4.8	0.92	
W1m1m3	u^*	5	3000.50	25.29	-7.8 ± 3.9	0.77	

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
(0.84)	g'	6	3000.40	25.45	-0.4 ± 2.5	0.89	
	r'	4	2000.22	24.92	2.0 ± 2.4	0.68	
	i'	6	3690.59	24.40	4.2 ± 3.0	0.69	obv. st. break; WL pass
	z'	6	3600.48	23.66	-2.9 ± 4.4	0.91	
`W1m1m4`	u^*	5	3000.21	25.13	-8.9 ± 4.8	0.70	
(0.89)	g'	5	2500.33	25.67	1.4 ± 1.9	0.66	
	r'	4	2000.20	24.90	2.9 ± 2.7	0.65	obv. st. break
	y'	7	4305.42	24.70	2.4 ± 3.4	0.84	WL pass
	z'	6	3600.27	23.62	-4.8 ± 4.7	0.60	
`W1m1p1`	u^*	5	3000.38	25.24	-0.4 ± 4.5	1.09	
(0.81)	g'	8	4000.76	25.73	1.6 ± 7.5	0.65	obv. st. break
	r'	4	2000.29	24.90	0.8 ± 3.6	0.68	obv. st. break
	i'	7	4305.63	24.33	-2.5 ± 3.2	0.54	obv. st. break
	z'	6	3600.40	23.31	-3.3 ± 4.8	0.65	obv. st. break
`W1m1p2`	u^*	5	3000.52	25.10	-3.6 ± 4.1	0.94	
(0.82)	g'	5	2500.48	25.43	-2.0 ± 3.1	0.94	
	r'	6	3000.45	25.08	0.7 ± 2.9	0.83	
	i'	7	4305.66	24.49	-3.2 ± 3.7	0.78	obv. st. break
	z'	11	6601.18	23.87	-6.2 ± 4.6	0.66	
`W1m1p3`	u^*	5	3000.50	25.06	-8.8 ± 4.3	0.85	
(0.83)	g'	5	2500.50	25.42	-1.1 ± 3.5	0.94	
	r'	4	2000.33	24.89	0.7 ± 2.8	0.83	
	i'	7	4305.70	24.64	-2.2 ± 3.3	0.76	WL pass
	z'	10	6001.00	23.56	-8.9 ± 4.8	0.72	
`W1m2m0`	u^*	4	2400.31	25.19	-8.2 ± 4.6	0.75	
(0.84)	g'	4	2000.31	25.39	-2.2 ± 2.6	0.62	obv. st. break
	r'	5	2500.43	24.90	1.4 ± 2.7	0.72	
	i'	5	3075.34	24.35	-1.5 ± 3.0	0.48	obv. st. break
	z'	6	3600.56	23.61	-2.0 ± 4.4	0.89	
`W1m2m1`	u^*	5	3000.27	25.26	-6.2 ± 4.6	0.78	
(0.84)	g'	5	2500.27	25.52	-1.6 ± 2.5	0.60	
	r'	6	3000.47	25.04	2.8 ± 2.6	0.77	
	i'	7	4305.38	24.62	-0.7 ± 3.2	0.47	obv. st. break; WL pass
	z'	6	3600.60	23.49	-2.2 ± 4.7	0.79	
`W1m2m2`	u^*	5	3000.28	25.28	-7.0 ± 3.9	0.73	
(0.78)	g'	5	2500.50	25.58	-1.3 ± 1.9	0.64	
	r'	5	2500.42	25.00	1.8 ± 3.5	0.61	obv. st. break
	i'	7	4305.62	24.56	-0.1 ± 2.9	0.50	obv. st. break; WL pass
	z'	6	3600.10	23.33	-3.4 ± 4.6	0.56	obv. st. break
`W1m2m3`	u^*	5	3000.50	25.23	-9.7 ± 5.1	0.72	
(0.79)	g'	4	2000.34	25.39	-0.2 ± 2.2	0.78	
	r'	4	2000.23	24.89	2.4 ± 2.5	0.77	
	i'	7	4305.55	24.36	-0.5 ± 2.7	0.64	obv. st. break; WL pass
	z'	6	3600.51	23.37	-3.1 ± 4.8	0.94	
`W1m2m4`	u^*	6	3600.28	25.32	-3.7 ± 6.7	0.79	
(0.88)	g'	6	3000.33	25.72	1.1 ± 2.1	0.92	
	r'	4	2000.24	24.95	3.3 ± 2.8	0.62	obv. st. break
	y'	7	4305.51	24.72	-0.9 ± 3.3	0.52	obv. st. break
	z'	6	3600.28	23.72	-5.2 ± 4.4	0.47	obv. st. break
`W1m2p1`	u^*	5	3000.25	25.31	-4.7 ± 4.7	0.77	
(0.83)	g'	5	2500.40	25.55	-1.2 ± 2.5	0.65	obv. st. break
	r'	5	2500.39	24.86	1.2 ± 2.9	0.66	
	i'	7	4305.71	24.50	0.4 ± 3.4	0.68	obv. st. break; WL pass
	z'	5	3000.32	23.29	-3.3 ± 4.2	0.68	
`W1m2p2`	u^*	5	3000.25	25.35	-6.8 ± 4.1	0.71	
(0.87)	g'	5	2500.43	25.38	-1.9 ± 2.6	0.85	
	r'	4	2000.28	24.88	1.6 ± 3.7	0.55	obv. st. break
	i'	7	4305.61	24.31	-1.1 ± 3.0	0.73	WL pass
	z'	6	3600.41	23.45	-4.1 ± 4.5	0.80	

Field/Area [sq. deg.]	Filter	N	expos. time [s]	m_{lim} [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
W1m2p3	u^*	5	3000.29	25.32	-3.1 ± 4.0	0.80	
(0.82)	g'	5	2500.51	25.38	-2.1 ± 2.7	0.81	
	r'	4	2000.24	24.91	1.7 ± 3.0	0.56	obv. st. break
	i'	7	4305.60	24.38	-1.2 ± 2.8	0.69	
	z'	6	3600.47	23.16	-7.4 ± 4.0	0.63	obv. st. break
W1m3m0	u^*	5	3000.21	25.18	-5.9 ± 4.1	0.88	
(0.87)	g'	7	3500.50	25.43	-0.6 ± 2.7	0.93	
	r'	5	2500.31	25.02	4.1 ± 3.6	0.74	obv. st. break
	i'	8	4920.54	24.57	0.7 ± 3.6	0.71	WL pass
	z'	6	3600.27	23.37	-3.6 ± 4.9	0.59	obv. st. break
W1m3m1	u^*	5	3000.22	25.23	-6.5 ± 4.1	0.91	
(0.81)	g'	4	2000.22	25.33	-0.4 ± 3.0	0.78	
	r'	4	2000.34	24.97	4.3 ± 2.6	0.75	
	i'	9	5535.48	24.60	1.9 ± 3.6	0.70	obv. st. break
	z'	6	3600.26	23.33	-5.5 ± 4.7	0.51	obv. st. break
W1m3m2	u^*	5	3000.21	25.26	-6.1 ± 3.9	1.00	
(0.79)	g'	5	2500.26	25.51	-1.4 ± 2.0	0.65	
	r'	4	2000.34	24.93	4.4 ± 2.4	0.68	obv. st. break
	i'	7	4305.30	24.60	2.0 ± 2.6	0.70	WL pass
	z'	6	3600.31	23.44	-3.9 ± 4.5	0.64	
W1m3m3	u^*	5	3000.20	24.94	-8.7 ± 3.9	0.72	
(0.82)	g'	5	2500.27	25.48	-1.3 ± 2.4	0.67	
	r'	4	2000.21	24.93	2.8 ± 2.7	0.68	
	i'	7	4305.29	24.61	2.4 ± 2.8	0.67	
	z'	6	3600.26	23.62	-3.7 ± 4.5	0.61	obv. st. break
W1m3m4	u^*	5	3000.17	25.23	-4.3 ± 10.1	0.93	
(0.84)	g'	5	2500.26	25.69	0.6 ± 3.4	0.88	
	r'	5	2500.37	25.00	1.8 ± 3.7	0.67	obv. st. break
	y'	7	4305.54	24.64	1.1 ± 2.9	0.59	WL pass
	z'	6	3600.27	23.48	-6.5 ± 5.6	0.49	obv. st. break
W1m3p1	u^*	5	3000.23	25.26	-3.1 ± 4.7	0.83	
(0.84)	g'	2	1000.15	24.88	-0.3 ± 2.8	0.89	
	r'	4	2000.30	24.94	3.3 ± 2.7	0.73	
	i'	7	4305.58	24.58	-0.7 ± 3.4	0.71	WL pass
	z'	6	3600.27	23.31	-5.0 ± 4.2	0.52	obv. st. break
W1m3p2	u^*	5	3000.23	25.22	-1.8 ± 4.8	0.82	
(0.86)	g'	5	2500.33	25.45	-1.4 ± 2.7	0.94	
	r'	4	2000.21	24.91	2.9 ± 3.1	0.77	
	i'	7	4305.48	24.64	-0.8 ± 3.2	0.64	obv. st. break
	z'	11	6600.49	23.58	-5.2 ± 4.4	0.59	obv. st. break
W1m3p3	u^*	5	3000.22	25.17	-1.5 ± 4.2	0.81	
(0.83)	g'	5	2500.25	25.44	-2.6 ± 2.7	0.67	
	r'	3	1500.24	24.68	3.5 ± 2.8	0.74	obv. st. break
	i'	7	4305.50	24.67	-2.4 ± 3.5	0.65	WL pass
	z'	6	3600.31	23.25	-5.9 ± 4.4	0.59	obv. st. break
W1m4m0	u^*	5	3000.19	25.11	-0.9 ± 6.0	0.87	
(0.82)	g'	5	2500.57	25.41	0.1 ± 2.9	0.88	
	r'	4	2000.19	24.94	7.0 ± 3.4	0.80	
	i'	7	4305.54	24.69	0.5 ± 2.9	0.57	WL pass
	z'	6	3600.26	23.34	-4.9 ± 4.3	0.65	obv. st. break
W1m4m1	u^*	6	3600.25	25.35	-5.4 ± 4.6	0.80	
(0.86)	g'	5	2500.40	25.41	0.3 ± 2.7	0.71	
	r'	2	1000.08	24.74	10.9 ± 2.8	1.03	
	i'	7	4305.45	24.63	1.9 ± 2.9	0.68	WL pass
	z'	6	3600.31	23.26	-3.2 ± 4.8	0.97	
W1m4m2	u^*	5	3000.23	25.21	-7.4 ± 4.0	0.82	
(0.80)	g'	5	2500.39	25.54	0.4 ± 2.5	0.83	
	r'	4	2000.27	24.96	9.1 ± 2.3	0.90	
	i'	8	4920.60	24.64	2.7 ± 3.2	0.61	obv. st. break

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
	z'	9	5400.54	23.74	-2.8 ± 5.4	1.00	
`W1m4m3`	u^*	5	3000.20	25.22	-7.7 ± 4.1	0.84	
(0.82)	g'	7	3500.33	25.68	1.0 ± 2.8	0.84	
	r'	4	2000.23	24.89	6.1 ± 2.7	0.94	
	i'	7	4305.58	24.46	2.8 ± 2.9	0.59	obv. st. break; WL pass
	z'	6	3600.30	23.55	-3.0 ± 4.5	0.82	
`W1m4m4`	u^*	5	3000.25	25.14	-8.5 ± 3.8	0.77	
(0.84)	g'	5	2500.25	25.66	-0.1 ± 2.5	0.80	
	r'	4	2000.25	24.80	4.9 ± 2.6	0.82	
	y'	9	5535.49	24.74	2.0 ± 3.0	0.81	WL pass
	z'	6	3600.25	23.36	-5.1 ± 4.6	0.58	obv. st. break
`W1m4p1`	u^*	6	3600.25	25.18	-0.6 ± 5.0	0.92	
(0.80)	g'	5	2500.50	25.53	-0.3 ± 2.7	0.95	
	r'	4	2000.25	24.92	5.0 ± 3.1	0.80	
	i'	7	4305.67	24.63	0.3 ± 3.1	0.66	obv. st. break; WL pass
	z'	6	3600.27	23.47	-3.8 ± 4.6	0.67	
`W1m4p2`	u^*	5	3000.23	25.17	-1.9 ± 4.3	1.08	
(0.83)	g'	7	3500.55	25.75	-0.3 ± 2.9	0.98	
	r'	4	2000.22	24.85	3.9 ± 2.9	0.69	
	i'	7	4305.61	24.56	0.3 ± 3.6	0.60	obv. st. break
	z'	6	3600.28	23.54	-2.6 ± 5.1	0.71	obv. st. break
`W1m4p3`	u^*	7	4200.31	25.25	0.1 ± 7.2	0.75	
(0.72)	g'	5	2500.33	25.34	-1.0 ± 2.9	0.78	
	r'	4	2000.21	24.97	3.0 ± 2.6	0.64	
	i'	7	4305.70	24.43	-0.6 ± 3.6	0.66	obv. st. break; no ch. 21
	z'	6	3600.26	23.39	-3.8 ± 4.7	0.84	
`W1p1m0`	u^*	5	3000.21	25.25	-6.2 ± 4.2	0.84	
(0.84)	g'	6	3000.39	25.54	-1.3 ± 2.7	0.76	
	r'	4	2000.27	24.85	0.1 ± 3.0	0.62	obv. st. break
	i'	7	4305.59	24.48	-3.2 ± 3.0	0.51	obv. st. break
	z'	6	3600.52	23.42	-3.0 ± 4.6	0.73	
`W1p1m1`	u^*	5	3000.42	25.16	0.5 ± 5.4	0.85	
(0.79)	g'	6	3000.47	25.74	-0.6 ± 2.7	0.88	
	r'	4	2000.25	24.97	-0.3 ± 2.7	0.64	
	i'	7	4305.53	24.84	1.5 ± 4.3	0.70	obv. st. break; WL pass
	y'	14	8610.58	25.20	4.3 ± 4.1	0.57	obv. st. break
	z'	6	3600.40	23.46	-2.2 ± 5.3	0.87	
`W1p1m2`	u^*	5	3000.42	25.38	0.7 ± 3.3	1.03	
(0.83)	g'	5	2500.47	25.60	-0.8 ± 2.3	0.76	
	r'	4	2000.23	24.86	1.9 ± 3.6	0.69	obv. st. break
	i'	8	4920.81	24.86	1.7 ± 2.8	0.70	WL pass
	z'	6	3600.43	23.50	-2.1 ± 4.8	0.72	
`W1p1m3`	u^*	6	3600.36	25.44	1.1 ± 4.0	0.99	
(0.80)	g'	5	2500.31	25.65	-0.8 ± 2.2	0.76	
	r'	4	2000.20	24.89	1.0 ± 2.4	0.75	
	i'	7	4305.57	24.50	3.2 ± 3.1	0.67	obv. st. break; WL pass
	z'	6	3600.50	23.59	-2.2 ± 4.3	0.69	
`W1p1m4`	u^*	5	3000.21	25.21	-1.3 ± 4.5	0.87	
(0.85)	g'	5	2500.22	25.66	0.2 ± 2.1	0.84	
	r'	3	1500.17	24.76	0.8 ± 2.8	0.71	
	y'	7	4305.53	24.72	2.1 ± 3.9	0.57	obv. st. break; WL pass
	z'	6	3600.25	23.39	-3.3 ± 4.4	0.50	obv. st. break
`W1p1p1`	u^*	5	3000.47	25.28	-3.5 ± 4.5	0.93	
(0.75)	g'	10	5000.88	25.97	-1.1 ± 2.6	0.94	
	r'	4	2000.27	24.92	0.3 ± 2.7	0.73	
	i'	7	4305.72	24.70	-2.5 ± 2.8	0.81	
	y'	6	3690.32	24.78	3.9 ± 3.2	0.59	obv. st. break; WL pass
	z'	11	6601.11	23.89	-6.2 ± 4.0	0.71	
`W1p1p2`	u^*	5	3000.48	25.29	-4.4 ± 4.2	0.99	

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
(0.85)	g'	5	2500.42	25.64	-0.5 ± 3.2	0.94	
	r'	4	2000.24	24.93	0.7 ± 3.2	0.61	obv. st. break
	i'	6	3690.57	24.45	-2.2 ± 3.5	0.78	WL pass
	z'	10	6001.00	23.60	-6.3 ± 5.0	0.65	
`W1p1p3`	u^*	5	3000.47	25.32	-3.8 ± 5.8	0.84	
(0.81)	g'	5	2500.42	25.55	0.8 ± 3.0	0.94	
	r'	6	3000.31	25.07	1.6 ± 3.2	0.74	
	i'	8	4920.84	24.64	-0.7 ± 3.6	0.94	WL pass; no ch. 21, 35
	z'	10	6001.03	23.70	-7.0 ± 5.4	0.68	
`W1p2m0`	u^*	5	3000.20	25.23	2.1 ± 4.0	0.91	
(0.83)	g'	5	2500.40	25.54	0.1 ± 3.1	0.94	no ch. 31
	r'	6	3000.41	25.07	-0.2 ± 2.9	0.71	
	i'	7	4305.48	24.43	-1.7 ± 3.8	0.65	obv. st. break; WL pass
	z'	6	3600.28	23.35	-4.2 ± 4.6	0.80	
`W1p2m1`	u^*	5	3000.25	25.34	2.3 ± 4.3	0.97	
(0.84)	g'	5	2500.43	25.70	0.5 ± 2.1	0.75	
	r'	4	2000.27	24.95	-1.0 ± 2.7	0.68	
	i'	7	4305.66	24.51	-0.3 ± 3.0	0.65	obv. st. break
	z'	7	4200.47	23.48	-4.1 ± 4.9	0.83	
`W1p2m2`	u^*	6	3600.53	25.44	3.4 ± 4.1	1.04	
(0.79)	g'	5	2500.45	25.61	0.6 ± 2.3	0.73	
	r'	4	2000.21	24.79	-0.0 ± 2.9	0.78	
	i'	7	4305.62	24.76	0.8 ± 2.7	0.64	obv. st. break; WL pass
	z'	7	4200.35	23.36	-2.6 ± 5.0	0.89	
`W1p2m3`	u^*	5	3000.33	25.32	-1.4 ± 3.9	0.75	
(0.85)	g'	5	2500.27	25.56	-1.3 ± 2.2	0.69	
	r'	4	2000.21	24.86	-0.1 ± 2.6	0.69	
	i'	7	4305.69	24.32	0.6 ± 3.1	0.69	WL pass
	z'	6	3600.44	23.43	-2.5 ± 4.6	0.91	
`W1p2m4`	u^*	5	3000.23	25.33	0.6 ± 4.2	0.83	
(0.83)	g'	5	2500.25	25.53	-0.7 ± 2.2	0.78	
	r'	4	2000.27	24.80	0.4 ± 2.6	0.75	
	y'	7	4305.57	24.66	0.2 ± 3.1	0.67	WL pass
	z'	6	3600.34	23.49	-3.6 ± 4.4	0.51	obv. st. break
`W1p2p1`	u^*	5	3000.53	25.41	-0.1 ± 4.4	1.03	
(0.76)	g'	5	2500.45	25.54	0.2 ± 3.1	0.99	
	r'	4	2000.29	24.85	1.5 ± 3.8	0.58	obv. st. break
	i'	8	4960.74	24.64	-1.5 ± 2.7	0.87	WL pass; no ch. 31
	z'	10	6000.82	23.73	-7.1 ± 4.4	0.68	obv. st. break
`W1p2p2`	u^*	5	3000.56	25.21	-1.2 ± 4.9	0.97	no ch. 21, 35
(0.78)	g'	5	2500.45	25.59	0.5 ± 3.7	0.94	
	r'	4	2000.29	24.93	2.4 ± 4.6	0.67	obv. st. break
	i'	8	4960.76	24.77	0.4 ± 3.7	0.94	WL pass
	y'	10	6150.52	24.82	1.1 ± 5.3	0.61	obv. st. break
	z'	10	6000.95	23.74	-5.6 ± 5.0	0.73	
`W1p2p3`	u^*	7	5950.29	25.61	-1.3 ± 4.8	0.99	no ch. 31
(0.82)	g'	5	2500.35	25.63	0.5 ± 3.7	0.94	
	r'	6	3000.46	25.13	2.3 ± 3.2	0.63	obv. st. break
	i'	7	4340.55	24.65	4.2 ± 4.3	0.93	WL pass
	z'	9	7200.41	23.80	-4.9 ± 5.5	0.75	obv. st. break; no ch. 31
`W1p3m0`	u^*	5	3000.55	25.07	-4.4 ± 5.9	0.63	
(0.75)	g'	5	2500.43	25.58	-1.3 ± 3.3	0.88	no ch. 31
	r'	4	2000.25	24.81	-0.9 ± 2.9	0.73	
	i'	5	3100.23	24.39	-2.2 ± 3.0	0.69	obv. st. break; no ch. 31
	z'	12	7201.49	23.57	-4.8 ± 4.8	0.71	obv. st. break
`W1p3m1`	u^*	5	3000.28	25.43	1.8 ± 4.3	0.98	
(0.75)	g'	5	2500.43	25.66	-2.3 ± 2.2	0.77	
	r'	4	2000.24	24.92	-2.0 ± 2.8	0.72	
	i'	6	3690.49	24.70	-0.0 ± 2.9	0.69	WL pass

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
	z'	6	3600.47	23.65	-4.5 ± 5.0	0.64	obv. st. break
W1p3m2 (0.90)	u^*	6	3600.31	25.39	-1.2 ± 4.1	0.79	
	g'	5	2500.43	25.60	-1.8 ± 2.1	0.70	
	r'	4	2000.22	24.80	-2.0 ± 2.6	0.70	
	i'	7	4305.56	24.55	-0.9 ± 2.8	0.60	obv. st. break; WL pass
	z'	6	3600.45	23.55	-3.0 ± 4.7	0.75	
W1p3m3 (0.81)	u^*	5	3000.33	25.27	3.0 ± 7.1	0.83	
	g'	5	2500.25	25.61	-2.0 ± 2.7	0.65	
	r'	5	2500.37	24.96	-2.0 ± 2.7	0.74	
	i'	7	4305.55	24.56	-0.4 ± 2.9	0.59	obv. st. break; WL pass
	z'	6	3600.35	23.46	-3.6 ± 4.3	0.83	
W1p3m4 (0.85)	u^*	5	3000.21	25.36	-	1.01	
	g'	5	2500.27	25.56	-	0.84	
	r'	4	2000.30	24.81	-	0.66	
	y'	7	4305.60	24.78	-	0.56	obv. st. break; WL pass
	z'	6	3600.32	23.48	-	0.55	obv. st. break
W1p3p1 (0.84)	u^*	5	3000.26	25.27	-0.7 ± 4.6	0.84	
	g'	6	3000.27	25.61	-1.0 ± 3.0	0.95	no ch. 31
	r'	4	2000.19	24.82	1.9 ± 5.4	0.53	obv. st. break
	i'	7	4340.32	24.59	-1.3 ± 3.1	0.94	no ch. 31
	y'	6	3690.27	24.70	2.0 ± 4.5	0.55	obv. st. break; WL pass
	z'	6	3600.47	23.47	-5.6 ± 4.8	0.69	
W1p3p2 (0.82)	u^*	8	4800.50	25.51	-0.4 ± 5.2	0.93	
	g'	5	2500.41	25.54	0.5 ± 3.1	0.84	no ch. 31
	r'	5	2500.29	24.88	0.7 ± 3.2	0.74	
	i'	6	3720.24	24.41	-0.7 ± 3.5	0.69	WL pass; no ch. 31
	z'	6	3600.58	23.27	-6.3 ± 4.0	0.56	obv. st. break
W1p3p3 (0.83)	u^*	5	3000.44	25.14	1.7 ± 5.3	0.95	
	g'	5	2500.20	25.51	0.9 ± 3.3	0.93	no ch. 31
	r'	4	2000.20	24.87	2.1 ± 3.4	0.83	
	i'	7	4340.33	24.47	1.9 ± 3.8	0.84	WL pass; no ch. 31
	z'	6	3600.62	23.31	-7.2 ± 4.8	0.55	obv. st. break
W1p4m0 (0.76)	u^*	5	3000.54	25.25	-3.9 ± 3.8	0.72	
	g'	5	2500.41	25.52	-1.7 ± 2.7	0.94	no ch. 31
	r'	4	2000.28	24.86	-0.2 ± 2.6	0.67	
	i'	5	3100.19	24.23	-3.3 ± 2.7	0.94	WL pass; no ch. 31
	z'	6	3600.72	23.48	-5.7 ± 4.3	0.68	
W1p4m1 (0.76)	u^*	5	3000.34	25.12	1.7 ± 4.4	0.98	
	g'	5	2500.50	25.62	-3.0 ± 2.0	0.85	
	r'	4	2000.29	24.92	-0.1 ± 3.0	0.77	
	i'	7	4305.70	24.76	-2.7 ± 2.7	0.59	obv. st. break; WL pass
	z'	7	4200.34	23.58	-5.6 ± 4.9	0.78	
W1p4m2 (0.86)	u^*	5	3000.23	25.44	-3.9 ± 5.0	0.73	
	g'	5	2500.35	25.61	-1.8 ± 2.1	0.80	
	r'	4	2000.25	24.84	-1.5 ± 2.5	0.67	
	i'	7	4305.54	24.59	-1.3 ± 2.9	0.64	WL pass
	z'	6	3600.25	23.19	-4.3 ± 4.9	0.71	
W1p4m3 (0.87)	u^*	4	2400.24	25.17	2.4 ± 4.4	0.96	
	g'	7	3500.35	25.64	-1.9 ± 2.8	0.77	
	r'	4	2000.21	24.83	-2.6 ± 3.9	0.69	
	i'	7	4305.43	24.76	-1.3 ± 2.9	0.69	WL pass
	z'	6	3600.31	23.38	-4.0 ± 4.9	0.72	
W1p4m4 (0.85)	u^*	6	3600.24	25.37	-	0.87	
	g'	5	2500.25	25.58	-	0.94	
	r'	9	4500.58	25.24	-	0.80	
	y'	14	8610.86	25.09	-	0.73	obv. st. break; WL pass
	z'	6	3600.25	23.43	-	0.54	obv. st. break
W1p4p1 (0.79)	u^*	5	3000.54	25.30	-2.1 ± 5.4	0.78	
	g'	5	2500.43	25.54	-0.6 ± 3.1	0.94	no ch. 31

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
	r'	4	2000.28	24.72	0.4 ± 4.4	0.52	obv. st. break
	i'	7	4340.62	24.47	-1.4 ± 2.9	0.80	WL pass
	z'	6	3600.52	23.33	-9.8 ± 4.5	0.46	obv. st. break
`W1p4p2`	u^*	5	3000.60	25.23	-3.6 ± 5.3	0.76	
(0.83)	g'	5	2500.44	25.52	-0.3 ± 3.6	0.86	no ch. 31
	r'	4	2000.32	24.76	0.0 ± 4.0	0.60	obv. st. break
	i'	7	4340.64	24.41	-0.9 ± 3.7	0.87	WL pass
	y'	10	6150.44	24.81	3.9 ± 5.0	0.63	obv. st. break
	z'	6	3600.50	23.43	-6.6 ± 4.4	0.55	obv. st. break
`W1p4p3`	u^*	5	3000.25	25.26	-2.4 ± 4.9	0.96	
(0.80)	g'	5	2500.41	25.64	1.0 ± 3.2	0.94	
	r'	4	2000.27	24.86	1.6 ± 3.9	0.73	
	i'	7	4340.34	24.51	-0.7 ± 3.7	0.93	WL pass; no ch. 31
	z'	6	3600.38	23.25	-7.1 ± 5.0	0.76	
`W2m0m0`	u^*	6	3600.31	25.34	-	0.89	
(0.65)	g'	6	3000.56	25.76	-	0.84	
	r'	4	2000.40	24.89	-	0.68	obv. st. break
	i'	7	4305.63	24.76	-	0.71	WL pass
	z'	7	4200.41	23.56	-	0.86	
`W2m0m1`	u^*	6	3600.32	25.61	-	1.13	
(0.63)	g'	5	2500.31	25.45	-	0.92	
	r'	4	2000.34	24.90	-	0.85	
	i'	7	4305.43	24.50	-	0.62	obv. st. break; WL pass
	z'	6	3600.61	23.73	-	0.89	
`W2m0p1`	u^*	5	3000.44	25.34	5.3 ± 2.4	0.91	
(0.63)	g'	5	2500.37	25.40	0.6 ± 2.5	0.83	
	r'	4	2000.27	24.78	-1.5 ± 6.8	0.64	obv. st. break
	i'	7	4305.44	24.42	-2.5 ± 3.3	0.56	obv. st. break; WL pass
	z'	6	3600.36	23.20	-6.7 ± 6.7	0.49	obv. st. break
`W2m0p2`	u^*	5	3000.52	25.22	6.4 ± 3.4	1.02	
(0.58)	g'	6	3000.71	25.66	-0.9 ± 1.9	0.85	
	r'	4	2000.26	24.73	3.0 ± 5.2	0.64	obv. st. break
	i'	7	4305.45	24.87	-0.8 ± 3.2	0.66	WL pass
	z'	6	3600.46	23.51	-4.7 ± 4.4	0.82	
`W2m0p3`	u^*	5	3000.50	25.25	6.2 ± 5.0	0.82	
(0.72)	g'	5	2500.34	25.26	-2.2 ± 1.9	0.71	
	r'	6	3000.44	25.04	1.6 ± 2.8	0.70	
	i'	7	4305.44	24.36	-0.4 ± 2.8	0.51	obv. st. break
	z'	6	3600.33	23.27	-3.7 ± 4.7	0.78	
`W2m1m0`	u^*	5	3000.24	25.09	-	0.92	
(0.68)	g'	5	2500.42	25.68	-	0.56	obv. st. break
	r'	4	2000.39	24.82	-	0.64	obv. st. break
	i'	7	4305.63	24.65	-	0.53	obv. st. break; WL pass
	z'	6	3600.38	23.52	-	0.71	
`W2m1m1`	u^*	5	3000.43	25.05	-	0.92	
(0.61)	g'	6	3000.61	25.43	-	0.71	
	r'	4	2000.26	24.86	-	0.76	
	i'	7	4305.53	24.61	-	0.60	obv. st. break; WL pass
	z'	6	3600.38	23.59	-	0.72	
`W2m1p1`	u^*	5	3000.50	25.11	4.7 ± 3.9	0.86	
(0.62)	g'	8	4000.82	25.75	-0.3 ± 2.4	0.92	
	r'	5	2500.47	24.91	-0.0 ± 2.9	0.82	
	i'	7	4305.73	24.76	-1.9 ± 2.9	0.63	WL pass
	z'	6	3600.37	23.34	-5.1 ± 5.0	0.82	
`W2m1p2`	u^*	7	4200.56	25.53	7.5 ± 3.7	1.12	
(0.61)	g'	6	3000.61	25.70	-0.8 ± 2.4	0.75	
	r'	4	2000.39	24.87	0.4 ± 2.6	0.81	
	i'	7	4305.48	24.56	-0.2 ± 2.9	0.51	obv. st. break

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
	z'	6	3600.44	23.48	-3.6 ± 4.7	0.72	
W2m1p3	u^*	5	3000.42	25.38	8.3 ± 3.4	1.07	
(0.70)	g'	5	2500.45	25.67	0.7 ± 2.3	0.75	no ch. 31
	r'	6	3000.56	25.16	1.7 ± 3.6	0.66	obv. st. break
	i'	5	3075.37	24.48	6.6 ± 2.7	0.63	obv. st. break; WL pass
	z'	6	3600.40	23.46	-3.0 ± 4.5	0.69	
W2p1m0	u^*	5	3000.35	25.04	-	0.75	
(0.72)	g'	5	2500.44	25.73	-	0.79	
	r'	4	2000.29	24.83	-	0.87	
	i'	7	4305.66	24.63	-	0.69	WL pass
	z'	6	3600.46	23.66	-	0.83	
W2p1m1	u^*	5	3000.46	25.36	-	0.83	
(0.67)	g'	5	2500.42	25.41	-	0.87	
	r'	4	2000.34	24.91	-	0.90	
	i'	7	4305.48	24.67	-	0.70	
	z'	6	3600.57	23.37	-	0.70	
W2p1p1	u^*	5	3000.44	25.30	-1.7 ± 4.3	0.91	
(0.62)	g'	6	3000.39	25.53	0.3 ± 1.8	0.79	
	r'	6	3000.36	25.19	0.4 ± 2.9	0.54	obv. st. break
	i'	5	3075.30	24.39	-1.3 ± 2.6	0.73	WL pass
	y'	7	4305.48	24.56	4.4 ± 2.8	0.63	obv. st. break
	z'	6	3600.47	23.76	-4.9 ± 4.6	0.76	
W2p1p2	u^*	9	5400.60	25.70	3.2 ± 4.0	1.10	
(0.66)	g'	6	3000.63	25.78	-0.2 ± 1.9	0.86	
	r'	4	2000.29	24.96	2.8 ± 3.3	0.67	obv. st. break
	i'	7	4305.36	24.76	-0.7 ± 2.6	0.71	WL pass
	z'	6	3600.39	23.30	-5.1 ± 4.7	0.64	
W2p1p3	u^*	5	3000.26	25.40	2.3 ± 3.7	1.02	
(0.70)	g'	5	2500.61	25.69	-0.3 ± 2.2	0.77	
	r'	4	2000.31	24.93	1.5 ± 2.3	0.72	
	i'	7	4305.69	24.82	-1.5 ± 2.9	0.76	
	z'	6	3600.31	23.38	-6.1 ± 4.7	0.69	
W2p2m0	u^*	5	3000.23	25.13	-	0.93	
(0.63)	g'	5	2500.42	25.29	-	0.80	
	r'	4	2000.39	24.69	-	0.73	
	i'	7	4305.74	24.73	-	0.71	WL pass
	z'	6	3600.41	23.65	-	0.92	
W2p2m1	u^*	5	3000.42	25.38	-	0.74	
(0.65)	g'	5	2500.37	25.40	-	0.83	
	r'	4	2000.29	24.78	-	0.75	
	i'	7	4305.48	24.58	-	0.67	WL pass
	z'	6	3600.60	23.62	-	0.72	
W2p2p1	u^*	5	3000.47	25.28	-0.8 ± 4.0	0.98	
(0.62)	g'	6	3000.73	25.71	0.5 ± 2.0	0.74	
	r'	4	2000.33	24.98	0.5 ± 2.3	0.72	
	i'	7	4305.85	24.67	-2.0 ± 2.8	0.55	obv. st. break; WL pass
	z'	6	3600.45	23.67	-6.0 ± 4.3	0.73	
W2p2p2	u^*	12	7200.77	25.78	3.5 ± 4.0	1.10	
(0.63)	g'	6	3000.63	25.64	0.6 ± 2.1	0.81	
	r'	6	3000.55	25.19	0.1 ± 2.6	0.59	obv. st. break
	i'	7	4305.32	24.57	-1.2 ± 3.0	0.81	WL pass
	y'	7	4305.34	24.63	-0.1 ± 3.7	0.56	obv. st. break
	z'	6	3600.30	23.44	-5.8 ± 5.0	0.71	
W2p2p3	u^*	5	3000.55	25.19	3.0 ± 4.0	0.81	
(0.69)	g'	5	2500.40	25.72	0.9 ± 2.7	0.93	no ch. 31
	r'	5	2500.40	25.04	1.5 ± 2.5	0.82	
	i'	7	4305.30	24.62	-2.3 ± 2.7	0.78	
	z'	7	4200.44	23.58	-6.1 ± 5.0	0.83	
W2p3m0	u^*	5	3000.43	25.11	-	0.84	

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
(0.58)	g'	3	1500.37	25.33	-	0.94	
	r'	4	2000.25	24.95	-	0.89	
	i'	7	4305.39	24.25	-	0.49	obv. st. break; WL pass
	z'	6	3600.39	23.91	-	0.75	
`W2p3m1`	u^*	5	3000.23	25.49	-	0.94	
(0.72)	g'	5	2500.25	25.43	-	0.84	
	r'	4	2000.29	24.72	-	0.76	
	i'	7	4305.40	24.46	-	0.71	WL pass
	z'	6	3600.60	23.44	-	0.55	obv. st. break
`W2p3p1`	u^*	5	3000.36	25.38	-2.4 ± 3.0	0.87	
(0.70)	g'	5	2500.41	25.67	1.2 ± 2.3	0.93	no ch. 31
	r'	4	2000.37	25.00	3.2 ± 5.5	0.60	obv. st. break
	i'	7	4305.28	24.64	-1.6 ± 2.7	0.74	WL pass
	z'	6	3600.28	23.42	-7.9 ± 5.0	0.72	
`W2p3p2`	u^*	5	3000.39	25.40	3.4 ± 3.5	0.97	
(0.69)	g'	5	2500.47	25.70	0.9 ± 2.5	0.94	no ch. 31
	r'	4	2000.37	24.92	2.3 ± 3.0	0.68	
	i'	6	3705.62	24.39	-1.5 ± 3.0	0.73	
	z'	12	7201.13	23.87	-6.3 ± 5.5	0.68	
`W2p3p3`	u^*	5	3000.38	25.40	2.6 ± 3.3	0.81	
(0.76)	g'	5	2500.38	25.65	1.5 ± 2.6	0.95	no ch. 31
	r'	3	1500.28	24.82	2.3 ± 2.4	0.80	
	i'	7	4305.33	24.23	-3.7 ± 2.9	0.57	WL pass
	z'	6	3600.55	23.44	-5.9 ± 4.9	0.70	
`W3m0m0`	u^*	5	3000.97	25.02	-1.0 ± 3.7	0.97	
(0.80)	g'	5	2500.83	25.53	0.2 ± 2.8	0.94	
	r'	4	2000.73	24.77	1.0 ± 2.3	0.87	
	i'	7	4341.33	24.41	-0.8 ± 2.7	0.94	
	z'	5	3000.97	23.12	-4.1 ± 4.2	0.76	
`W3m0m1`	u^*	5	3001.06	25.02	1.2 ± 3.6	0.94	
(0.79)	g'	5	2500.88	25.56	0.1 ± 2.4	1.08	
	r'	5	2500.92	24.97	2.1 ± 2.7	0.78	
	i'	6	3721.20	24.32	1.0 ± 2.5	0.68	
	y'	7	4306.46	24.69	2.6 ± 4.1	0.60	obv. st. break; WL pass
	z'	8	4801.86	24.08	-2.5 ± 3.7	0.77	
`W3m0m2`	u^*	5	3000.94	25.10	-5.5 ± 4.0	0.76	
(0.79)	g'	5	2500.81	25.58	1.6 ± 2.2	0.94	
	r'	5	2501.22	24.91	0.8 ± 2.4	0.91	
	i'	7	4341.37	24.35	0.5 ± 2.4	0.68	WL pass
	z'	6	3601.22	23.42	-3.7 ± 3.6	0.68	
`W3m0m3`	u^*	5	3000.90	24.97	-4.7 ± 3.9	0.76	
(0.68)	g'	5	2500.76	25.40	4.0 ± 2.6	0.94	
	r'	5	2501.05	24.98	0.1 ± 2.8	0.79	
	i'	7	4341.25	24.12	0.1 ± 2.8	0.80	WL pass
	z'	6	3601.11	23.54	-4.0 ± 4.4	0.73	
`W3m0p1`	u^*	5	3001.00	25.18	-2.8 ± 4.2	0.95	
(0.83)	g'	5	2501.01	25.57	-0.7 ± 2.3	0.85	
	r'	4	2000.90	24.89	2.8 ± 2.6	0.88	
	i'	7	4306.36	24.55	0.5 ± 3.1	0.65	
	z'	6	3601.07	23.66	-2.8 ± 4.5	0.72	
`W3m0p2`	u^*	5	3001.01	25.10	-0.9 ± 4.3	0.97	
(0.72)	g'	5	2501.02	25.55	-0.5 ± 3.0	0.84	
	r'	4	2001.09	24.85	3.9 ± 2.8	0.74	
	i'	7	4306.54	24.55	-0.6 ± 3.2	0.63	WL pass
	z'	4	2400.87	23.26	-3.1 ± 4.9	0.77	
`W3m0p3`	u^*	5	3001.06	25.29	-4.1 ± 4.1	0.98	
(0.75)	g'	5	2501.02	25.60	-1.4 ± 2.5	0.80	
	r'	4	2000.80	24.93	4.4 ± 3.7	0.68	obv. st. break
	i'	7	4306.44	24.34	-1.0 ± 3.2	0.58	WL pass

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
	z'	6	3601.11	23.81	-2.4 ± 4.5	0.82	
`W3m1m0`	u^*	5	3001.00	24.91	-11.7 ± 3.9	0.69	
(0.78)	g'	6	3001.15	25.66	-0.2 ± 2.4	0.99	
	r'	4	2000.93	25.09	1.8 ± 2.7	0.66	obv. st. break
	i'	7	4306.36	24.24	-1.5 ± 3.1	0.53	obv. st. break; WL pass
	z'	4	2400.76	23.01	-4.5 ± 4.6	0.71	
`W3m1m1`	u^*	5	3001.01	25.14	-1.4 ± 4.4	0.94	
(0.83)	g'	5	2500.98	25.56	-0.7 ± 1.9	0.69	
	r'	4	2000.89	24.82	1.6 ± 2.3	0.68	obv. st. break
	i'	7	4306.44	24.33	-0.7 ± 2.9	0.54	obv. st. break
	z'	6	3601.12	23.32	-4.3 ± 3.8	0.79	
`W3m1m2`	u^*	5	3000.96	24.48	-1.5 ± 3.8	0.86	
(0.81)	g'	4	2000.82	25.40	0.8 ± 1.9	0.88	
	r'	5	2501.08	24.93	0.6 ± 2.9	0.65	obv. st. break
	i'	7	4306.47	24.34	-0.9 ± 2.9	0.65	obv. st. break; WL pass
	z'	6	3601.20	23.45	-4.7 ± 4.3	0.67	
`W3m1m3`	u^*	5	3000.98	24.61	2.5 ± 3.6	0.75	
(0.79)	g'	5	2500.90	25.64	2.0 ± 2.0	0.86	no ch. 21
	r'	4	2000.68	24.84	1.0 ± 2.4	0.70	obv. st. break; no ch. 21
	i'	7	4306.61	24.41	-0.1 ± 2.6	0.66	WL pass; no ch. 21
	z'	6	3601.17	23.41	-5.3 ± 4.1	0.59	obv. st. break
`W3m1p1`	u^*	5	3000.98	25.19	-4.9 ± 4.1	0.86	
(0.84)	g'	5	2501.06	25.57	-0.6 ± 2.1	0.76	
	r'	4	2001.30	24.90	3.2 ± 2.4	0.73	
	i'	7	4306.52	24.68	0.6 ± 2.9	0.75	WL pass
	z'	6	3601.07	23.45	-2.7 ± 3.9	0.80	
`W3m1p2`	u^*	5	3001.04	25.14	0.1 ± 4.3	1.02	
(0.76)	g'	5	2501.03	25.65	-0.1 ± 2.5	0.73	
	r'	4	2001.09	24.98	5.3 ± 3.4	0.77	
	i'	7	4306.66	24.51	1.0 ± 3.8	0.66	obv. st. break; WL pass
	z'	6	3601.17	23.42	-2.7 ± 4.2	0.74	
`W3m1p3`	u^*	5	3001.10	25.46	-4.8 ± 4.6	0.94	
(0.81)	g'	5	2501.03	25.54	-1.4 ± 2.5	0.82	
	r'	4	2000.78	24.91	4.7 ± 3.6	0.69	obv. st. break
	i'	7	4306.60	24.48	-0.3 ± 3.6	0.83	WL pass
	y'	7	4306.39	24.69	-1.6 ± 4.4	0.57	obv. st. break
	z'	5	3000.86	23.46	-4.2 ± 4.8	0.61	obv. st. break
`W3m2m0`	u^*	4	2400.83	24.90	-10.2 ± 2.9	0.73	
(0.52)	g'	5	2500.96	25.52	0.1 ± 2.1	0.94	
	r'	4	2000.90	25.09	1.8 ± 2.1	0.68	
	i'	6	3691.11	24.05	-0.2 ± 2.8	0.72	
	z'	6	3601.17	23.41	-4.4 ± 3.6	0.57	
`W3m2m1`	u^*	5	3000.98	25.16	-1.8 ± 3.6	0.90	
(0.77)	g'	5	2500.95	25.52	-1.1 ± 2.4	0.92	
	r'	4	2000.90	24.84	1.3 ± 2.4	0.61	obv. st. break
	i'	6	3691.15	24.26	0.4 ± 3.5	0.63	obv. st. break
	y'	7	4306.34	24.64	-2.8 ± 3.2	0.51	obv. st. break; WL pass
	z'	6	3601.19	23.34	-4.3 ± 4.0	0.55	
`W3m2m2`	u^*	5	3001.06	25.11	-0.8 ± 3.4	0.77	
(0.81)	g'	5	2500.89	25.55	-0.1 ± 2.1	0.89	
	r'	4	2000.84	24.97	1.3 ± 2.9	0.62	obv. st. break
	i'	7	4306.23	24.46	-0.5 ± 2.5	0.65	WL pass
	z'	6	3601.22	23.43	-4.0 ± 4.1	0.64	obv. st. break
`W3m2m3`	u^*	9	5401.69	25.57	5.2 ± 7.5	0.86	
(0.77)	g'	5	2500.99	25.62	1.1 ± 2.1	0.89	
	r'	4	2000.85	24.97	1.0 ± 2.2	0.80	
	i'	7	4306.42	24.40	-0.3 ± 2.5	0.73	WL pass
	z'	6	3601.18	23.22	-3.8 ± 4.4	0.82	
`W3m2p1`	u^*	5	3000.93	25.19	-6.3 ± 4.2	0.88	

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
(0.79)	g'	5	2501.15	25.63	0.7 ± 2.3	0.81	
	r'	5	2501.07	25.07	3.1 ± 2.4	0.85	
	i'	7	4306.56	24.67	0.2 ± 2.6	0.77	
	y'	7	4306.44	24.62	0.0 ± 2.8	0.63	WL pass
	z'	6	3601.19	23.54	-3.0 ± 4.1	0.67	
W3m2p2	u^*	5	3000.98	25.07	-1.7 ± 4.1	0.96	
(0.66)	g'	5	2501.01	25.62	-0.6 ± 2.3	0.65	
	r'	4	2000.77	24.89	4.1 ± 2.6	0.78	
	i'	6	3691.42	24.26	-1.5 ± 3.5	0.59	WL pass
	z'	6	3601.21	23.50	-1.5 ± 4.4	0.85	
W3m2p3	u^*	5	3000.91	25.40	-7.2 ± 4.1	0.88	
(0.79)	g'	5	2501.01	25.61	-1.0 ± 2.7	0.81	
	r'	6	3001.13	25.24	4.8 ± 3.5	0.74	
	i'	8	4921.74	24.58	1.2 ± 4.5	0.69	
	y'	7	4306.50	24.69	-4.0 ± 3.8	0.51	obv. st. break
	z'	6	3601.42	24.04	-1.6 ± 4.7	0.73	
W3m3m0	u^*	5	3001.04	24.99	-12.3 ± 3.6	0.78	
(0.77)	g'	5	2500.92	25.59	-0.6 ± 2.0	0.76	
	r'	4	2000.85	25.00	0.6 ± 2.3	0.61	obv. st. break
	i'	7	4306.27	24.63	-0.9 ± 2.2	0.54	WL pass
	z'	6	3601.20	23.39	-3.8 ± 4.1	0.62	
W3m3m1	u^*	5	3000.90	25.05	-0.8 ± 3.7	0.93	
(0.75)	g'	5	2500.79	25.26	-2.3 ± 1.7	0.84	
	r'	4	2000.71	24.80	0.7 ± 2.2	0.72	
	i'	7	4341.04	24.56	-0.6 ± 2.9	0.94	WL pass
	z'	6	3601.18	23.39	-4.0 ± 4.2	0.56	obv. st. break
W3m3m2	u^*	5	3000.99	24.98	-2.7 ± 4.1	0.67	
(0.80)	g'	5	2500.87	25.39	-0.5 ± 2.0	0.65	obv. st. break
	r'	4	2000.82	24.64	1.4 ± 2.8	0.80	
	i'	7	4306.27	24.44	-1.1 ± 3.1	0.52	obv. st. break; WL pass
	z'	6	3601.20	23.33	-4.2 ± 3.4	0.54	obv. st. break
W3m3m3	u^*	5	3001.02	25.08	-0.4 ± 3.3	0.74	
(0.79)	g'	5	2500.93	25.48	0.2 ± 2.1	0.81	
	r'	4	2000.83	24.81	2.1 ± 2.7	0.80	
	i'	7	4306.19	24.47	-1.6 ± 2.7	0.49	obv. st. break; WL pass
	z'	6	3601.21	23.51	-3.5 ± 3.1	0.58	
W3m3p1	u^*	5	3001.03	25.06	-10.4 ± 3.7	0.66	
(0.78)	g'	5	2500.80	25.72	0.1 ± 2.1	0.71	
	r'	4	2000.77	25.01	3.2 ± 2.1	0.87	
	i'	6	3691.02	24.62	0.9 ± 2.6	0.82	WL pass
	y'	7	4306.38	24.75	-2.1 ± 3.1	0.50	obv. st. break
	z'	6	3601.11	23.59	-2.5 ± 3.8	0.62	
W3m3p2	u^*	5	3000.88	25.25	-0.3 ± 3.9	1.04	
(0.74)	g'	5	2500.76	25.67	-1.0 ± 2.3	0.69	
	r'	5	2500.95	25.01	3.9 ± 2.8	0.80	
	i'	7	4306.48	24.28	-0.5 ± 3.0	0.69	WL pass
	z'	6	3601.18	23.54	-1.6 ± 4.4	0.59	
W3m3p3	u^*	5	3000.90	25.45	-0.2 ± 5.1	1.07	
(0.82)	g'	5	2501.02	25.64	-1.2 ± 2.8	0.77	
	r'	4	2000.83	25.02	3.8 ± 2.8	0.70	
	i'	7	4306.49	24.59	0.2 ± 3.5	0.66	obv. st. break
	z'	6	3601.19	23.91	-0.6 ± 5.5	0.70	
W3p1m0	u^*	5	3001.05	25.28	-6.4 ± 4.0	0.81	
(0.79)	g'	5	2501.23	25.60	-1.4 ± 2.2	0.95	
	r'	4	2000.91	24.94	1.7 ± 2.2	0.79	
	i'	7	4341.94	24.47	0.9 ± 2.6	0.73	WL pass
	z'	9	5401.85	23.69	-4.5 ± 3.9	0.82	
W3p1m1	u^*	5	3000.98	25.22	-0.4 ± 3.6	1.08	
(0.71)	g'	5	2501.11	25.67	-1.4 ± 2.0	0.94	

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
	r'	4	2000.88	24.88	1.2 ± 2.4	0.81	
	i'	7	4341.97	24.47	2.3 ± 2.9	0.74	WL pass
	z'	10	6002.07	23.70	-3.8 ± 4.0	0.89	
`W3p1m2`	u^*	5	3001.05	25.35	-1.5 ± 3.3	1.04	
(0.79)	g'	5	2501.32	25.67	-0.9 ± 2.0	0.93	
	r'	4	2000.81	24.81	0.7 ± 2.0	0.88	
	i'	7	4341.66	24.51	1.7 ± 2.7	0.77	WL pass
	z'	6	3601.25	23.52	-3.4 ± 4.0	0.84	
`W3p1m3`	u^*	5	3001.00	25.13	-0.6 ± 3.5	1.12	
(0.69)	g'	7	3501.76	25.83	0.2 ± 1.9	0.95	no ch. 21
	r'	5	2501.19	25.05	-0.0 ± 2.2	0.77	no ch. 21
	i'	7	4341.83	24.67	0.3 ± 2.8	0.73	WL pass; no ch. 21
	z'	6	3601.16	23.46	-3.7 ± 4.0	0.70	no ch. 21
`W3p1p1`	u^*	5	3001.03	25.28	-4.1 ± 3.9	0.93	
(0.74)	g'	5	2500.97	25.66	-1.3 ± 2.2	0.79	
	r'	4	2000.88	24.94	2.7 ± 3.1	0.84	
	i'	7	4306.44	24.64	1.1 ± 3.1	0.71	
	z'	6	3601.17	23.63	-2.5 ± 4.6	0.72	
`W3p1p2`	u^*	10	6001.88	25.59	-8.1 ± 3.8	0.84	
(0.76)	g'	5	2501.02	25.56	-1.9 ± 2.5	0.71	
	r'	4	2000.72	25.02	3.2 ± 2.5	0.64	obv. st. break
	i'	7	4306.26	24.74	1.4 ± 4.9	0.62	obv. st. break; WL pass
	z'	6	3601.23	23.36	-4.0 ± 4.6	0.74	
`W3p1p3`	u^*	5	3001.08	25.37	-10.5 ± 4.3	0.82	
(0.79)	g'	5	2501.01	25.56	-1.2 ± 2.3	0.83	
	r'	5	2500.96	25.12	4.0 ± 2.9	0.75	
	i'	7	4306.36	24.57	-0.6 ± 2.8	0.64	WL pass
	z'	6	3601.19	23.71	-1.9 ± 4.3	0.75	
`W3p2m0`	u^*	5	3001.12	25.17	-4.6 ± 4.1	0.86	
(0.82)	g'	7	3501.60	25.83	-1.5 ± 2.3	0.94	
	r'	4	2000.80	24.97	2.7 ± 3.7	0.75	
	i'	7	4306.56	24.64	2.8 ± 2.8	0.69	WL pass
	z'	6	3601.24	23.19	-6.3 ± 3.9	0.59	obv. st. break
`W3p2m1`	u^*	5	3001.00	25.32	-5.2 ± 3.7	0.88	
(0.76)	g'	5	2501.12	25.73	-1.1 ± 2.0	0.94	
	r'	7	3501.52	25.21	0.8 ± 2.1	0.98	
	i'	7	4341.58	24.63	5.0 ± 2.4	0.94	
	z'	6	3601.25	23.07	-6.3 ± 3.5	0.69	
`W3p2m2`	u^*	5	3000.98	25.32	-6.5 ± 3.3	0.83	
(0.77)	g'	7	3501.42	25.71	-0.9 ± 1.8	0.94	
	r'	3	1500.59	24.75	1.5 ± 2.2	0.94	
	i'	7	4341.70	24.68	2.9 ± 2.4	0.62	
	z'	6	3601.22	23.36	-5.0 ± 3.4	0.56	obv. st. break
`W3p2m3`	u^*	5	3001.08	25.42	-3.3 ± 6.2	0.89	
(0.84)	g'	7	3501.67	25.79	-0.3 ± 2.0	0.94	
	r'	4	2000.87	24.82	1.9 ± 2.7	0.75	obv. st. break
	i'	9	5582.17	24.67	0.1 ± 2.7	0.66	obv. st. break
	y'	7	4306.41	24.57	-0.2 ± 3.5	0.76	WL pass
	z'	7	4201.41	23.32	-6.4 ± 4.2	0.57	obv. st. break
`W3p2p1`	u^*	5	3001.11	25.19	-12.9 ± 4.2	0.78	
(0.74)	g'	6	3001.15	25.69	-1.9 ± 2.1	0.84	
	r'	4	2000.92	24.94	2.5 ± 2.5	0.64	obv. st. break
	i'	9	5536.78	24.56	0.8 ± 3.6	0.70	
	z'	7	4201.43	23.13	-5.2 ± 4.4	0.57	obv. st. break
`W3p2p2`	u^*	5	3001.01	25.20	-16.8 ± 3.9	0.68	
(0.76)	g'	5	2501.13	25.53	-2.4 ± 2.2	0.81	
	r'	4	2000.79	24.88	2.7 ± 2.9	0.79	
	i'	7	4306.55	24.51	-2.0 ± 3.3	0.54	
	z'	6	3601.17	22.95	-5.1 ± 4.9	0.53	obv. st. break

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
W3p2p3	u^*	5	3001.11	25.25	-6.3 ± 3.5	0.99	
(0.76)	g'	5	2500.92	25.49	-2.0 ± 2.1	0.74	
	r'	4	2000.84	24.93	3.8 ± 2.5	0.67	
	i'	7	4306.42	24.56	-1.4 ± 2.9	0.69	WL pass
	z'	6	3601.24	23.82	-2.5 ± 4.9	0.63	
W3p3m0	u^*	5	3000.99	25.26	-2.9 ± 4.2	0.99	
(0.78)	g'	5	2500.91	25.67	-1.6 ± 2.1	0.97	
	r'	4	2000.77	25.06	1.3 ± 2.6	0.76	
	i'	7	4306.39	24.74	1.5 ± 2.9	0.71	obv. st. break
	z'	6	3601.16	23.61	-4.9 ± 4.6	0.73	
W3p3m1	u^*	5	3000.95	25.24	-6.1 ± 3.8	0.89	
(0.79)	g'	6	3001.11	25.71	-2.8 ± 2.1	0.89	
	r'	4	2000.77	25.05	0.2 ± 1.9	0.79	
	i'	6	3691.32	24.87	3.9 ± 2.5	0.85	WL pass
	y'	7	4306.45	24.71	3.4 ± 3.9	0.68	
	z'	6	3601.15	23.64	-8.8 ± 4.2	0.64	
W3p3m2	u^*	5	3000.92	25.41	-5.6 ± 3.3	0.95	
(0.79)	g'	6	3001.17	25.72	-1.5 ± 1.6	0.92	
	r'	4	2000.75	25.09	0.7 ± 1.9	0.81	
	i'	5	3076.06	24.24	2.2 ± 3.2	0.60	obv. st. break
	y'	7	4306.52	24.65	2.0 ± 2.7	0.73	
	z'	6	3601.10	23.56	-7.9 ± 3.6	0.60	
W3p3m3	u^*	5	3001.04	25.38	-8.5 ± 3.5	0.86	
(0.76)	g'	7	3501.12	25.70	-1.1 ± 2.3	0.89	
	r'	4	2000.72	25.06	1.3 ± 2.3	0.84	
	i'	7	4306.32	24.54	0.9 ± 2.7	0.73	WL pass
	z'	6	3601.13	23.35	-7.0 ± 4.5	0.61	
W3p3p1	u^*	5	3001.02	25.23	-7.1 ± 4.3	0.88	
(0.75)	g'	5	2501.02	25.70	-2.3 ± 2.0	0.97	
	r'	4	2000.83	25.06	1.4 ± 2.4	0.76	
	i'	7	4306.35	24.73	-0.2 ± 2.8	0.83	WL pass
	z'	6	3601.18	23.07	-6.9 ± 3.9	0.68	
W3p3p2	u^*	5	3001.04	25.18	-9.6 ± 3.4	0.94	
(0.80)	g'	5	2500.97	25.62	-1.9 ± 2.3	0.92	
	r'	4	2000.84	25.06	1.4 ± 3.0	0.69	
	i'	7	4306.34	24.51	-1.5 ± 3.2	0.77	WL pass
	y'	8	4921.71	24.67	1.1 ± 3.4	0.75	
	z'	6	3601.23	23.09	-3.2 ± 3.8	0.69	
W3p3p3	u^*	5	3001.04	25.19	-7.3 ± 3.5	0.93	
(0.75)	g'	5	2500.99	25.20	-1.9 ± 2.3	0.69	
	r'	4	2000.87	25.03	3.8 ± 2.3	0.69	
	i'	7	4306.41	24.51	-1.9 ± 2.7	0.77	WL pass
	z'	6	3601.24	24.09	-1.7 ± 3.9	0.63	obv. st. break
W4m0m0	u^*	5	3000.26	25.15	0.8 ± 3.6	1.03	
(0.79)	g'	5	2500.40	25.48	0.1 ± 2.1	0.78	
	r'	5	2500.37	24.80	0.5 ± 2.3	0.63	obv. st. break
	i'	7	4305.65	24.57	-0.4 ± 3.0	0.71	obv. st. break
	z'	10	6000.74	23.72	-2.6 ± 4.1	0.67	obv. st. break
W4m0m1	u^*	6	3600.38	25.19	-2.3 ± 3.7	0.74	
(0.72)	g'	10	5000.68	25.89	0.4 ± 2.2	0.82	
	r'	4	2000.25	24.78	1.0 ± 2.3	0.67	
	i'	7	4305.36	24.60	-0.4 ± 3.0	0.55	obv. st. break
	z'	6	3600.27	23.26	-3.3 ± 4.5	0.48	obv. st. break
W4m0m2	u^*	5	3000.31	25.26	-3.4 ± 3.8	0.72	
(0.73)	g'	10	5000.58	25.84	1.0 ± 2.3	0.76	
	r'	4	2000.26	24.78	1.1 ± 2.5	0.63	obv. st. break
	i'	7	4305.58	24.76	2.1 ± 2.9	0.60	WL pass
	z'	6	3600.34	23.62	-0.4 ± 4.7	0.62	
W4m0p1	u^*	5	3000.40	25.26	0.6 ± 3.5	0.94	

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
(0.76)	g'	5	2500.38	25.54	-1.1 ± 2.1	0.85	
	r'	4	2000.28	24.84	0.3 ± 2.4	0.62	obv. st. break
	i'	7	4305.33	24.42	-1.9 ± 2.8	0.62	obv. st. break; WL pass
	z'	6	3600.42	23.20	-6.2 ± 4.4	0.51	obv. st. break
`W4m1m0`	u^*	5	3000.34	24.74	-0.9 ± 3.4	0.69	
(0.72)	g'	5	2500.28	25.65	0.8 ± 2.0	0.83	
	r'	4	2000.30	24.81	2.2 ± 3.5	0.57	obv. st. break
	i'	7	4305.69	24.64	0.2 ± 2.6	0.64	obv. st. break; WL pass
	z'	6	3600.49	23.36	-1.8 ± 4.3	0.74	
`W4m1m1`	u^*	5	3000.24	25.05	-1.9 ± 3.4	0.68	
(0.70)	g'	13	6500.96	26.02	1.6 ± 2.3	0.79	
	r'	4	2000.33	24.78	1.3 ± 2.3	0.78	
	i'	6	3690.44	24.63	2.6 ± 3.2	0.71	WL pass
	y'	5	3075.26	24.56	-0.4 ± 3.2	0.53	obv. st. break
	z'	6	3600.28	23.39	-2.5 ± 4.3	0.45	obv. st. break
`W4m1m2`	u^*	6	3600.41	25.19	-0.6 ± 7.4	0.62	
(0.77)	g'	5	2500.53	25.56	2.0 ± 1.8	0.79	
	r'	4	2000.34	24.68	1.7 ± 4.3	0.53	obv. st. break
	i'	7	4305.43	24.64	4.0 ± 2.9	0.72	WL pass
	z'	6	3600.43	23.54	-0.1 ± 4.3	0.49	obv. st. break
`W4m1p1`	u^*	5	3000.33	25.13	-0.2 ± 3.6	0.77	
(0.77)	g'	10	5000.51	25.88	0.4 ± 1.9	0.79	
	r'	4	2000.39	24.77	1.7 ± 2.7	0.59	obv. st. break
	i'	7	4305.52	24.49	-0.0 ± 2.6	0.86	
	y'	7	4305.77	24.67	0.0 ± 3.0	0.60	WL pass
	z'	6	3600.55	23.31	-3.8 ± 4.6	0.67	
`W4m1p2`	u^*	5	3000.26	25.28	-0.9 ± 3.5	0.76	
(0.80)	g'	5	2500.25	25.69	0.9 ± 2.2	0.70	
	r'	4	2000.29	24.64	1.5 ± 2.5	0.62	obv. st. break
	y'	7	4305.57	24.70	0.4 ± 2.9	0.52	obv. st. break
	z'	7	4200.55	23.46	-3.8 ± 4.9	0.91	
`W4m1p3`	u^*	5	3000.24	25.32	0.1 ± 3.9	0.89	
(0.72)	g'	5	2500.24	25.66	-0.4 ± 1.9	0.78	
	r'	4	2000.33	24.71	2.5 ± 2.6	0.80	
	y'	7	4305.60	24.73	13.8 ± 7.1	0.51	obv. st. break
	z'	6	3600.50	23.24	-4.3 ± 4.9	0.85	
`W4m2m0`	u^*	5	3000.21	25.31	-2.0 ± 3.5	0.94	
(0.61)	g'	5	2500.32	25.52	0.2 ± 2.0	0.73	
	r'	3	1500.23	24.64	2.0 ± 2.4	0.65	obv. st. break
	i'	10	6150.66	24.88	1.4 ± 2.8	0.72	WL pass
	z'	6	3600.31	23.33	0.1 ± 4.6	0.62	obv. st. break
`W4m2p1`	u^*	5	3000.34	24.98	1.9 ± 3.7	1.00	
(0.62)	g'	5	2500.44	25.36	-0.2 ± 2.1	0.85	
	r'	4	2000.45	24.93	1.3 ± 2.5	0.63	obv. st. break
	i'	7	4305.72	24.05	1.1 ± 2.7	0.56	obv. st. break; WL pass
	z'	6	3600.36	23.45	-2.9 ± 4.8	0.74	
`W4m2p2`	u^*	5	3000.21	25.33	0.6 ± 3.9	0.95	
(0.75)	g'	5	2500.38	25.63	0.0 ± 2.1	0.78	
	r'	4	2000.30	24.62	1.5 ± 2.3	0.68	
	y'	7	4305.48	24.57	0.7 ± 3.3	0.63	obv. st. break
	z'	6	3600.49	23.35	-2.8 ± 4.7	0.76	
`W4m2p3`	u^*	5	3000.24	25.36	0.4 ± 4.3	0.82	
(0.71)	g'	5	2500.21	25.65	-0.9 ± 2.1	0.82	
	r'	4	2000.34	24.73	1.7 ± 2.3	0.89	
	y'	6	3690.32	24.73	1.3 ± 3.3	0.70	WL pass
	z'	6	3600.52	23.13	-3.3 ± 4.5	0.64	
`W4m3m0`	u^*	5	3000.23	25.29	-1.1 ± 3.8	0.93	
(0.64)	g'	5	2500.23	25.60	-1.5 ± 2.1	0.69	
	r'	4	2000.42	24.79	1.1 ± 2.2	0.68	

Field/Area [sq. deg.]	Filter	N	expos. time [s]	$m_{\rm lim}$ [AB mag]	Sloan $\Delta m \times 100$	seeing [$''$]	comments
	i'	6	3690.61	23.95	-0.2 ± 3.5	0.49	obv. st. break; WL pass
	z'	6	3600.52	23.55	-1.0 ± 4.7	0.79	
`W4m3p1`	u^*	7	4200.33	25.46	1.2 ± 3.9	0.92	
(0.66)	g'	5	2500.36	25.58	-1.8 ± 1.9	0.70	
	r'	4	2000.47	24.81	0.9 ± 3.1	0.52	obv. st. break
	i'	3	1845.30	23.66	-4.8 ± 2.9	0.44	obv. st. break; WL pass
	z'	6	3600.52	23.42	-2.0 ± 4.6	0.75	
`W4m3p2`	u^*	5	3000.33	25.26	0.7 ± 3.9	0.84	
(0.67)	g'	5	2500.44	25.60	-1.7 ± 1.8	0.81	
	r'	4	2000.43	24.45	0.6 ± 2.5	0.63	
	i'	7	4305.69	24.06	0.9 ± 3.2	0.65	obv. st. break; WL pass
	z'	5	3000.44	23.32	-2.7 ± 4.6	0.70	
`W4m3p3`	u^*	5	3000.29	25.34	0.5 ± 3.7	0.90	
(0.72)	g'	6	3000.35	25.70	-1.9 ± 2.0	0.71	
	r'	4	2000.33	24.72	1.7 ± 3.0	0.76	
	y'	7	4305.56	24.70	-0.7 ± 3.1	0.57	WL pass
	z'	6	3600.40	23.32	-2.9 ± 4.7	0.62	
`W4p1m0`	u^*	5	3000.43	25.08	0.9 ± 4.1	0.90	
(0.74)	g'	5	2500.30	25.39	-1.2 ± 2.0	0.67	
	r'	4	2000.32	24.80	2.4 ± 2.4	0.73	obv. st. break
	i'	7	4305.52	24.29	-3.3 ± 3.0	0.53	obv. st. break; WL pass
	z'	6	3600.36	23.30	-4.8 ± 4.2	0.55	obv. st. break
`W4p1m1`	u^*	5	3000.22	25.12	0.2 ± 3.7	0.85	
(0.73)	g'	5	2500.34	25.35	-0.9 ± 2.2	0.83	
	r'	4	2000.31	24.77	1.4 ± 2.4	0.67	
	i'	14	8611.03	24.82	-0.4 ± 3.6	0.62	obv. st. break; WL pass
	z'	6	3600.33	23.33	-3.6 ± 4.8	0.63	
`W4p1m2`	u^*	5	3000.39	25.05	-1.4 ± 3.5	0.86	
(0.72)	g'	5	2500.31	25.35	-0.5 ± 1.8	0.84	
	r'	4	2000.26	24.81	1.3 ± 2.4	0.61	
	i'	7	4305.41	24.61	0.8 ± 3.1	0.71	WL pass
	z'	6	3600.57	23.27	-2.3 ± 4.5	0.49	obv. st. break
`W4p1p1`	u^*	5	3000.28	25.25	-1.9 ± 4.0	0.78	
(0.72)	g'	5	2500.30	25.54	-0.7 ± 1.9	0.58	obv. st. break
	r'	4	2000.30	24.83	2.6 ± 2.6	0.75	
	i'	7	4305.57	24.65	-3.9 ± 2.9	0.57	obv. st. break
	z'	6	3600.39	23.22	-7.3 ± 4.4	0.55	obv. st. break
`W4p2m0`	u^*	5	3000.31	25.05	0.6 ± 3.8	0.80	
(0.71)	g'	5	2500.47	25.33	0.8 ± 2.0	0.72	
	r'	4	2000.33	24.82	1.8 ± 2.3	0.67	
	i'	7	4305.53	24.66	-1.5 ± 2.8	0.56	WL pass
	z'	6	3600.39	23.16	-4.1 ± 4.4	0.79	
`W4p2m1`	u^*	5	3000.36	25.04	2.7 ± 3.5	0.97	
(0.65)	g'	5	2500.39	25.45	-0.4 ± 2.0	0.83	
	r'	4	2000.40	24.75	1.1 ± 2.9	0.70	
	i'	7	4305.69	24.55	-1.9 ± 2.9	0.66	WL pass
	z'	12	7200.72	23.75	-4.4 ± 4.6	0.73	
`W4p2m2`	u^*	5	3000.29	25.15	1.8 ± 3.6	1.01	
(0.73)	g'	5	2500.37	25.37	-0.5 ± 2.0	0.77	
	r'	4	2000.38	24.71	0.6 ± 2.7	0.66	obv. st. break
	i'	13	7995.87	24.95	-0.3 ± 3.9	0.62	obv. st. break; WL pass
	z'	10	6000.55	23.67	-2.8 ± 4.6	0.72	

APPENDIX B: CFHTLenS IMAGING PRODUCTS

The CFHTLenS imaging data release contains the essential products after the co-addition and masking phase (see Sect. 3.4). The package consists of: (1) The primary science pixel data from all pointings for all available filters. (2) Weight maps characterising the sky-noise properties in each pixel of the primary science data. The weights contain *relative* weights of the pixels in the science data. The `SExtractor` `WEIGHT_TYPE` to use for object analysis is `MAP_WEIGHT`. (3) A `flag` image which has a 0 where the weight is unequal to zero and a 1 where the weight is zero, i.e. a 1 indicates a pixel in the co-added science image to which none of the single frames contributed. (4) *sum* images are integer pixel data whose pixel value correspond to the number of input images contributing to the corresponding pixel of the science data. (5) *mask* images encoding the results of our masking procedures. Note that we do not officially release any products from the eight W2 pointings with incomplete colour coverage; see Fig. 1. The CFHTLenS team only processed these pointings up to the image co-addition phase but did not create object catalogues for these fields. Interested readers can obtain imaging data products of these fields (except mask files) by request to the authors.

All data are self-contained to easily allow further processing. All necessary information to relate image pixel positions to sky coordinates and flux values to apparent magnitudes is provided in the form of FITS image header keywords. Astrometric header items follow standard World Coordinate System descriptions as described in Greisen & Calabretta (2002). The essential header keywords to extract photometric information are summarised in Table B1.

To reject obviously problematic sources from an object catalogue extracted from CFHTLenS images, everything that contains pixels that have a 1 in the `flag` should be removed. A much more sophisticated and fine-tuned catalogue cleaning can be done with our `mask` files. It encodes areas from our masking procedures (see Sect. 3.4) as well as information from all the `flag` images of all filters. The coding of the pixel values in this image is given in Table B2. The primary reference of our masking procedures is the lensing band, i.e. the i'-band or y'-band observation. In particular, features not common to all filters (e.g. asteroid tracks) are ensured to be masked only in these passbands. We first mask stars brighter than $m_{\rm GSC} < 11$[27] with a wide mask that encompasses the stellar halo and prominent diffraction spikes. We empirically determined that for our CFHTLenS observations stars with $m_{\rm GSC} < 10.35$ should be masked in any case while many stellar haloes in the range $11.0 \leqslant m_{\rm GSC} \leqslant 10.35$ are only barely visible. In obvious cases the corresponding mask was removed during our manual pass through all image masks. Remaining stars down to $m_{\rm GSC} < 17.5$ are surrounded with a template that is scaled with magnitude. In addition we independently mask areas for the four filters u^*, g', r' and i' whose object density distribution differs significantly from the mean of the one square degree pointing. We found this to effectively catch areas around large extended objects that we want to exclude in our shear/lensing experiments. Rich galaxy clusters that have been masked by this procedure were again unmasked during the manual verification phase. The precise procedures to obtain the masks are described in Erben et al. (2009). All science analyses of the CFHTLenS team is performed with sources having a mask value of $\leqslant 1$. Details are given in the corresponding science articles. When using `SExtractor` the flagging or masking information can be straightforwardly transfered to an object catalogue by using the corresponding images as *external flags*.

We note that we do not release sky-subtracted single frame data products for the lensing bands. These data form the basis for our shear analyses with `lensfit`; (see Miller et al. 2012). The data volume of these products is very large and they are of interest for a few groups only. They can be obtained by request to the authors. The same applies for the PSF homogenised versions of the co-added images which were used to estimate object colours for our photo-z estimates.

[27] Objects that need to be masked are identified primarily with the Guide Star Catalogues 1 and 2 (see e.g. Lasker et al. 2008).

Table B1. Description of important CFHTLenS FITS Image Header Keywords

Keyword	Description
`TEXPTIME`	total exposure time in seconds
`EXPTIME`	*effective* exposure time. This is always $1s$ for CFHTLenS data; the pixel unit of all CFHTLenS images is ADU/s
`MAGZP`	magnitude zeropoint; apparent object AB magnitudes need to be estimated via: $mag = \mathrm{MAGZP} - 2.5\log(\text{object counts})$
`GAIN`	The effective median gain of the exposure. To obtain meaningful magnitude error estimates within `SExtractor` the `GAIN` configuration parameter needs to be set the the `GAIN` header value
`SEEING`	measured mean image seeing for the science image. Put this value into the `SEEING_FWHM` `SExtractor` parameter to obtain a meaningful `SExtractor` star/galaxy separation.

Table B2. Description of values in CFHTLenS masking data. Note that an actual pixel in a mask can be a sum of listed values; see text for further details.

`mask` value	Description
1	large masks around stars and stellar haloes for objects with $10.35 \leqslant m_{\rm GSC} \leqslant 11.00$. For a less conservative masking you can consider using sources falling within these masks
2	large masks around stars and stellar haloes for objects with $m_{\rm GSC} < 10.35$
4	masks around asteroid trails in the lensing band
8	g'-band mask around areas of significant object overdensities and gradients in the object density distribution
16	$r'/i'/y'$-band mask around areas of significant object overdensities and gradients in the object density distribution
32	u^*-band mask around areas of significant object overdensities and gradients in the object density distribution
64	masks around bright stellar sources
128	pixels flagged in the i'/y'-band
256	pixels flagged in the u^*-band
512	pixels flagged in the g'-band
1024	pixels flagged in the r'-band
2048	pixels flagged in the z'-band
8192	the area is outside the CFHTLenS catalogue of the pointing (see Sect. C)

APPENDIX C: CFHTLenS CATALOGUE PRODUCTS

The CADC data release interface[28] allows users to query and retrieve the CFHTLenS catalogue that our team is using for all analyses. In this section we briefly summarise the catalogue creation procedures and we explain all relevant catalogue entries.

The catalogue are created starting from the co-added CFHTLenS images (see Sect. 3.4). In short we perform the following steps to create catalogues on a pointing basis:

(i) From an initial `SExtractor` source list we extracted catalogues of stellar sources for each pointing in the lensing band. To have a high-confidence catalogue for the crucial steps of PSF mapping and PSF homogenisation this step was performed manually with the help of stellar locus diagrams.

(ii) The PSFs of each CFHTLenS pointing were gaussianised to the seeing of the worst image quality amongst the five filters. This step yields new versions of the co-added data which are subsequently used to estimate robust galaxy colours (Hildebrandt et al. 2012).

(iii) `SExtractor` is run in dual image mode six times. The detection image is always the unconvolved lensing band image and the measurement images are the Gaussianised images in the five bands and - in the sixth run - the unconvolved lensing band image. This last run is performed to obtain total magnitudes (`SExtractor` quantity MAG_AUTO Kron 1980) in the lensing band, whereas the first five runs yield accurate colours based on isophotal magnitudes.

(iv) We add a position dependent estimate for the limiting magnitude to each object. This is done with the help of `SExtractor` RMS check images, which contain an estimate of the sky-background variation on each pixel position. Limiting magnitudes are estimated within the seeing disk as described in Hildebrandt et al. (2012).

(v) Galactic extinction values on each object position are added based on the Schlegel et al. (1998) dust maps.

(vi) The estimated total magnitudes in the lensing band (see above) are combined with the colour estimates, the limiting magnitudes (to decide whether an object is detected in a given band), and the extinction values to yield estimates of the total magnitudes in the other bands. This procedure assumes that there are no colour gradients in the objects. For galaxies with colour gradients the total magnitudes in the $u^*g'r'z'$-bands might be biased and only the lensing band total magnitudes are reliable.

(vii) A mask column based on the final, eye-balled and modified masks (see Sect. 3.4) is added to the object entries.

(viii) We use the Bayesian Photometric Redshift Code (`BPZ`; Benitez 2000) to estimate photo-z. Instead of the standard template set provided by `BPZ` we use a recalibrated one described in Capak (2004).

(ix) Absolute rest-frame magnitudes in the MegaPrime filters as well as stellar masses (see Velander et al., submitted to MNRAS, for details) are added based on the `BPZ` photo-z estimate and a best-fit template from the Bruzual & Charlot (2003) library. This step is performed keeping the redshift fixed using the `LePhare` code (Arnouts et al. 2002) and the Ilbert et al. (2010) technique.

(x) From each CFHTLenS pointing catalogue we cut away overlap regions with neighbouring pointings. This avoids issues with multiple entries for a specific source when the pointing based catalogues are merged to a *patch-wide* source list. Areas that are cut out in this way are specifically marked in our mask files with a value of 8192; see Table B2.

[28] please visit `http://www.cadc-ccda.hia-iha.nrc-cnrc.gc.ca/community/CFHTLens/query.html`

The last step concludes the estimation of all photometry related quantities in the CFHTLenS catalogues. Important additional details of the photometric catalogue creation can be found in Hildebrandt et al. (2012).

The star and galaxy catalogues were then passed to the `lensfit` shear analysis of the individual exposures as described by Miller et al. (2012) and Heymans et al. (2012). The multiplicative and additive shear calibration factors described by Miller et al. (2012), eq. (14), and Heymans et al. (2012) , eq. (19), may be calculated from the quantities `scalelength` and `SNratio` given below.

Table C1 lists all relevant catalogue entries that can be retrieved from the CADC interface. We list the column name, a short description, the software to estimate the quantity and the units. Most quantities refer to the lensing band that served as the detection image. If a quantity relates to another band this is indicated directly in the quantity names with an `_x` where `x` is either [ugriyz].

In the following we give additional information on certain columns in the catalogue:

- `field`: The CFHTLenS string identifier such as W1m0m0.
- `MASK`: The mask column as described in Table B2. If `MASK`>0 the object centre lies within a mask. Objects with `MASK`$\leqslant 1$ can safely be used for most scientific purposes. Objects with `MASK`> 1 have been removed from the released catalogues.
- `T_B`: `BPZ` spectral type. 1=CWW-Ell, 2=CWW-Sbc, 3=CWW-Scd, 4=CWW-Im, 5=KIN-SB3, 6=KIN-SB2. Note that the templates are interpolated; hence fractional types occur.
- `NBPZ_FILT, NBPZ_FLAGFILT, NBPZ_NONDETFILT`: The number of filters in which an object has *reliable photometry* (`NBPZ_FILT`), i.e. magnitude errors $<$ 1mag and objects brighter than the limiting magnitude; number of filters in which an object has formal magnitude errors of 1 mag or larger (`NBPZ_FLAGFILT`); number of filters in which an object is fainter than the formal limiting magnitude (`NBPZ_NONDETFILT`). If an object would fall into `FLAGFILT` as well as `NONDETFILT` it is listed under `FLAGFILT`. Magnitude errors refer to `MAG_ISO`.
- `BPZ_FILT, BPZ_FLAGFILT, BPZ_NONDETFILT`: These keys contain a binary encoding to identify filters with problematic photometric properties for photo-z estimation. Filter u^* is assigned a '1', g' = '2', r' = '4', i'/y' = '8' and z' = '16'. The keys `BPZ_FILT`, `BPZ_FLAGFILT` and `BPZ_NONDETFILT` represent the sums of the filters fulfilling the criteria detailed for `NBPZ_FILT` etc.
- `PZ_full`: This is the full photometric redshift probability distribution $P(z)$ to $z = 3.5$. There are 70 columns sampling $P(z)$ at intervals of $\mathrm{d}z = 0.05$. The first bin is centred at $z = 0.025$. Note these 70 columns do not always sum to 1. There is a final bin not included in the catalogues with $z > 3.5$ that, in a small number of cases, has non-zero probability. In CFHTLenS analysis we set a hard prior of a zero probability past $z > 3.5$, which corresponds to normalising each $P(z)$ to one. For future flexibility however we do not impose this normalisation on the catalogue, leaving it to the user to apply.
- `star_flag`: Stars and galaxies are separated using a combination of size, lensing band magnitude and colour information. For $i' < 21$, all objects with size smaller than the PSF are classified as stars. For $i' > 23$, all objects are classified as galaxies. In the range $21 < i' < 23$, a star is defined as size<PSF and $\chi^2_{\rm star} < 2.0\chi^2_{\rm gal}$,

with χ^2 the best fit χ^2 from the galaxy and star libraries given by LePhare.

• MAG_LIM_[ugriyz]: These are 1-σ limiting magnitudes measured in a circular aperture with a diameter of $2\times$FWHM, where FWHM is the seeing in this band (see SEEING keyword in the image header).

• weight: The lensfit inverse-variance weight to be used in the shear measurement for each galaxy as given by equation 8 of Miller et al. (2012).

• fitclass: Object classification as returned by lensfit. Possible classification values are:

0	galaxy
1	star
-1	no fit attempted: no useable data
-2	no fit attempted: blended or complex object
-3	no fit attempted: miscellaneous reason
-4	bad fit: χ^2 exceeds critical value

• scalelength: lensfit galaxy model scalelength.

• bulge-fraction: lensfit galaxy model bulge fraction, B/T. The galaxy model disk fraction is $1 - B/T$.

• model-flux: lensfit galaxy model total flux, in calibrated CCD data units.

• SNratio: lensfit signal-to-noise ratio of the object, measured within a limiting isophote 2-σ above the noise.

• PSF-e1, PSF-e2: lensfit mean of the PSF ellipticity values measured on each exposure at the location of the galaxy. PSF ellipticities are derived from the PSF model at the location of each galaxy and are top-hat weighted with radius 8 pixels.

• PSF-Strehl-ratio: mean of a set of 'pseudo-Strehl ratio' values for the PSF model calculated on each exposure. The pseudo-Strehl ratio is defined as the fraction of light in the PSF model that falls into the central pixel, and is a measure of the sharpness of the PSF.

• e1, e2: lensfit raw uncalibrated expectation values of galaxy ellipticity, from the marginalised galaxy ellipticity likelihood surface, to be used for shear measurement. We strongly urge the user not to use these raw uncalibrated ellipticity values blindly in a lensing analysis. First, any shear measurement must measure weighted averages using the lensfit weight. Secondly an additive c2 correction must be applied to the e2 component. This can be calculated from eq. (19) of Heymans et al. (2012) from the qualities scalelength and SNratio noting that eq. (19) is given in physical units (arcsec) whereas scalelength is given in pixel units. One MegaCam CCD pixel is $0\farcs187$. Thirdly a multiplicative shear calibration correction must be applied following equations 15-17 of Miller et al. (2012). Note that it is incorrect to apply this multiplicative correction on an object by object basis. Instead this calibration correction must be applied as as an ensemble average (see Sect. 4.1 of Heymans et al. 2012 for a summary of the required calibration corrections). Finally, for any study that uses a shear two-point correlation function, only the fields that pass the systematics tests of Heymans et al. (2012) can be used. For other studies, such as galaxy-galaxy lensing or cluster studies we recommend that the measurement is made and compared for the full data set and the 75% of the data which passes the field selection. In the galaxy-galaxy lensing analysis of Velander et al. (submitted to MNRAS) we find no difference between these two results. We also note that e2 is defined relative to a decreasing RA such that the user may need to multiply e2 by -1 when defining angles in the RA/Dec reference frame (see Kilbinger et al., submitted to MNRAS, for a discussion on calculating angles on a sphere).

• n-exposures-used: the number of individual exposures used by lensfit for this galaxy.

• PSF-e<1,2>-exp<i>: the lensfit PSF model ellipticity (top-hat weighted as above) on each exposure i at the location of the galaxy. An entry of -99 indicates that the object is either unobserved in the image (i.e a chip gap or, owing to the dithers, the object is off the edge of the image), or it indicates that the exposure does not exist. The majority of CFHTLenS lensing band observations have 7 exposures, but some have up to 15 hence there are 15 entries for each object.

Table C1: CFHTLenS Catalogue columns: Quantities with a $\_x$ at the end of their name are present for all available filters, i.e. $x \in \{u^*, g', r', i', y', z'\}$.

column name	description	programme	unit
id	Unique CFHTLenS object identification ID.	CADC	
field	Name of the CFHTLenS pointing.	THELI	
SeqNr	Running number within CFHTLenS pointing	SExtractor	
Xpos	Centroid x-pixel position in the CFHTLenS pointing	SExtractor	pix
Ypos	Centroid y-pixel position in the CFHTLenS pointing	SExtractor	pix
ALPHA_J2000	Centroid sky position right ascension	SExtractor	deg
DELTA_J2000	Centroid sky position declination	SExtractor	deg
n_exposures_detec	Number of individual exposures contributing to the object's position.	SExtractor	
BackGr	Background counts at centroid position	SExtractor	counts
Level	Detection threshold above background.	SExtractor	counts
MU_MAX	Peak surface brightness above background	SExtractor	$\mathrm{mag} \cdot \mathrm{arcsec}^{-2}$
MU_THRESHOLD	Detection threshold above background.	SExtractor	$\mathrm{mag} \cdot \mathrm{arcsec}^{-2}$
MaxVal	Peak flux above background	SExtractor	counts
Flag	SExtractor extraction flags.	SExtractor	
A_WORLD	Profile RMS along major axis.	SExtractor	deg
B_WORLD	Profile RMS along minor axis.	SExtractor	deg
THETA_J2000[29]	Position angle (east of north).	SExtractor	deg
ERRA_WORLD	World RMS position error along major axis.	SExtractor	deg
ERRB_WORLD	World RMS position error along minor axis.	SExtractor	deg
ERRTHETA_J2000	J2000 error ellipse position angle	SExtractor	deg
FWHM_IMAGE	FWHM assuming a gaussian object profile	SExtractor	pix
FWHM_WORLD	FWHM assuming a gaussian object profile	SExtractor	deg
FLUX_RADIUS	Half-light radius.	SExtractor	pixels
CLASS_STAR	SExtractor star-galaxy classifier	SExtractor	
MASK	CFHTLenS mask value at the object's position	automask	
ISOAREA_WORLD	Isophotal area above analysis threshold	SExtractor	deg^2
NIMAFLAGS_ISO	Number of flagged pixels	SExtractor	
Z_B	BPZ redshift estimate; peak of posterior probability distribution	BPZ	
Z_B_MIN	Lower bound of the 95% confidence interval of Z_B	BPZ	
Z_B_MAX	Upper bound of the 95% confidence interval of Z_B	BPZ	
T_B	Spectral type corresponding to Z_B	BPZ	
ODDS	Empirical ODDS of Z_B	BPZ	
Z_ML	BPZ maximum likelihood redshift	BPZ	
T_ML	Spectral type corresponding to Z_ML	BPZ	
CHI_SQUARED_BPZ	χ^2 value associated with Z_B	BPZ	
BPZ_FILT	Filters with good photometry (BPZ); bit-coded mask	THELI	
NBPZ_FILT	Number of filters with good photometry (BPZ)	THELI	
BPZ_NONDETFILT	Filters with faint photometry (not used in BPZ); bit-coded mask	THELI	
NBPZ_NONDETFILT	Number of filters with faint photometry (BPZ)	THELI	
BPZ_FLAGFILT	Filters with flagged photometry (BPZ); bit-coded mask	THELI	
NBPZ_FLAGFILT	Number of flagged filters (BPZ)	THELI	
LP_Mx	Absolute rest-frame magnitude in the x-band	LePhare	mag
star_flag	Star-galaxy separator ($0 =$galaxy, $1 =$star)	LePhare	
LP_log10_SM_MED	Logarithm of the stellar mass	LePhare	$\log_{10}(M_\odot)$
LP_log10_SM_INF	Lower bound of the logarithm of the stellar mass	LePhare	$\log_{10}(M_\odot)$
LP_log10_SM_SUP	Upper bound of the logarithm of the stellar mass	LePhare	$\log_{10}(M_\odot)$
PZ_full	Vector containing the posterior photo-z probability in steps of $\Delta_z = 0.05$.	BPZ	
MAG_x	estimated total magnitude in the x-band	SExtractor	mag
MAGERR_x	Magnitude error in the x-band	SExtractor	mag
IMAFLAGS_ISO_x	x-band FLAG-image logically OR'ed flags values	SExtractor	
MAG_LIM_x	1-σ limiting magnitude in the x-band	SExtractor	mag
EXTINCTION_x	Galactic extinction in the x-band	SExtractor	mag
KRON_RADIUS	Scaling radius of the ellipse for magnitude measurements w.r.t. A_WORLD and B_WORLD	SExtractor	

[29] In SExtractor V2.4.6 the definition of the quantity THETA_J2000 was changed and the sign flipped (Bertin, private communication). Because the CFHTLenS catalogues were extracted with an older version users should be aware of this if they produce new source lists from the released CFHTLenS data.

column name	description	programme	unit
weight	lensfit weight	lensfit	
fitclass	lensfit fit class	lensfit	
scalelength	lensfit galaxy model scalelength	lensfit	pix
bulge-fraction	lensfit galaxy model bulge-fraction	lensfit	
model-flux	lensfit galaxy model flux	lensfit	ADU
SNratio	lensfit data S/N ratio	lensfit	
PSF-e1, PSF-e2	lensfit PSF mean ellipticity components 1 and 2	lensfit	
PSF-Strehl-ratio	lensfit PSF pseudo-Strehl ratio	lensfit	
e1, e2	lensfit galaxy e1, e2 expectation values	lensfit	
n-exposures-used	Number of exposures used in lensfit measurement	lensfit	
PSF-e<1,2>-exp<i>	lensfit PSF model e1, e2 on each exposure i ($i = 1, n$)	lensfit	